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RAILWAY AND COMMERCIAL GAZETTE:

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Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES—No. LXXVI.*

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SECTION V.

As a modification of piling, or spilling, may be cited that used in the mines of Eisenerz and Vordenerberg, in Styria—the so called timbering with "Auflegen," literally "laying on" of the piles. This consists of ordinary door sets, made of half round wood, the legs generally resting on ground sills, the flat faces of the cap pieces and legs being laid against the sides of the level, and backed with flat planks or piles, which meet flush behind the legs and cap pieces of the door-sets. The use of such timbering can only take place where the ground, although somewhat loose, has still sufficient cohesion to remain for a short time without support—a so-called half quick stratum. The following is the mode of inserting, proceeding from a complete set of timbering. The ground close to the roof is scraped out, in such a manner as to leave just sufficient space for the introduction of the roof piles, which rest at one end on the cap piece of the door-set for half its breadth, and at the other end on short sprags, which are prepared beforehand in numbers, and of various sizes. Only so much of the ground as is just sufficient for the insertion of the roof piles in succession is taken away at a time. When the whole of the roof piles have thus been inserted, so that their back ends rest on the last cap piece, and their front ends on as many short sprags, a cross bar, or stempel, is placed beneath them near the front end. As this cross spar, which is intended to support the piles, cannot itself be supported from the sides, some provision must be made for supporting it whilst the sprags are being afterwards removed to make room for the cap piece. This is accomplished by driving iron clamps into the legs of the last door set, and placing on each side of the level a long bar, called the driving or pile bar, with one end beneath the cross bar supporting the piles, resting about the middle of its length on the top of the clamp in the last door-set, the back end being bent beneath the iron clamp in the last door-set but one next to the face. This bends the two bars with the convex side towards the roof, and hence throws an upward pressure on the cross bar supporting the front ends of the piles. The cross bar is sometimes still further supported by a short sprag under its centre. When the roof piles have thus been temporarily, but securely, fixed in position the ground is excavated at one side in the same manner, beginning at the upper end and coming downwards, the far ends of the piles being supported by short horizontal sprags, until the whole of one side has thus been temporarily supported, and sufficient space obtained to insert a temporary leg piece. In like manner the opposite side of the level may be covered with the next set of piles, and there will now be no difficulty in removing the centre core of the ground; and when this has been done the sill of the permanent door-set can be laid, and the door-set fixed upon it tight against the roof and side piles, which are overlapped by the cap and leg pieces by half the breadth of the latter.

The latter part of this operation is sometimes carried out somewhat differently, the door-set, or rather the leg piece, on either side being inserted before the insertion of the piles. This is carried out in the following manner. A very narrow excavation, only just so wide as is absolutely necessary, and the full height of the level, is made in the centre of the face. This is carried forward to about half the length of the next set of timbering in the direction of the level, when the excavation is then continued to the right or left hand, as the case may be, so as to come into that corner of the level beneath the end of the piles, where one of the legs of the next door-set will have to be placed. The leg is then fixed permanently in position, if no ground sill is intended to be placed beneath it; and one end of the cap piece is placed upon the top of the leg, the other end being temporarily supported in position by means of a short sprag. When one leg piece has been thus firmly fixed in position the side piles are laid in position behind it and the leg of the last door-set, beginning at the top and going downwards; only so much ground, however, is removed at a time as is necessary for placing in the next pile. When this side has been completed in this manner a second narrow excavation is made on the opposite side, and the second leg piece placed in position; the piles are inserted in this side in the same manner, which completes this set of timbering, the whole of the ground having been gradually removed during these operations. When it is necessary that the door-set should rest upon ground or floor sills it is usual to place a temporary footing under the first leg piece inserted, until the ground has been excavated for placing the second leg piece in position, when one end of the permanent door sill is at once inserted, and the second leg piece upon it, and afterwards the other end is driven beneath the first leg piece simultaneously with the removal of the temporary footing. It will of course be understood that in this description of timbering the piles are all cut of exactly the same length, and that the distance between the door-sets remains the same, and is equal to the length of the piles. This distance will, of course, depend on the character of the ground as to what length is likely to stand without support for the necessary length of time, but varies from 3 ft. to 6 ft.

The case may occur when not only the piling of the sides and roof but also of the floor and working face is necessary. Such a necessity arises when driving through quick sand, or so called swimming ground, which is in such a fluid condition that it will find its way through any cracks or sufficiently wide openings between the piles. One of the best means of facilititating the driving through such ground is to drain off the water as much as possible, so as to leave the surrounding ground more solid and less quick. Where this can be done much less difficulty will be encountered in driving by the following methods.

The first which we shall consider will be the modification, or rather the extension, of the ordinary method of spilling. The most complete work of the kind appears to be that carried out at the Friedrich's Mine, Tarnowitz, in Silesia, and which has been described in complete detail by Herr Bergmeister Thurnagel in Karsten's Archives. Supposing that the ordinary method of spilling has been carried on with the insertion of large half round wood for the floor sills till swimming ground has been reached, the level will be protected on all sides by the ordinary piles, but the working face, if not made secure, will be liable to an irruption of swimming or quick ground. To avoid this the so-called closing boards are placed in front of the last door-set, and bearing with the ends against the leg pieces. In order to render the timbering more firm and solid in its position, so as to be less liable to sink in the quick ground, the ground sills on which the door-sets rest are made of very large half round wood, placed with the flat face downwards, and in order that they shall have as great an extent of surface as possible to bear upon they are made much longer than the width of the level, so as to project on either side into the ground. The sets are all made of exactly the same size, so that they are cut at the surface, and sent down in greater or less numbers ready for use. The boards of which the piles are made are (on account of the great pressure they have to bear) made 1½ in. to 3 in. thick. Before the closing boards are inserted in position the driving in of the piles will have commenced. The corner piles are first inserted: as we have before mentioned, they are made trapezoidal in shape, with the front end much broader than the back, so as to allow of the necessary divergence of the piles for inserting the next door-set. After the corner piles have been inserted, the remainder of the piles are inserted in the order we have before described—beginning with the roof piles at the corners, and proceeding towards the centre, and with the side piles beginning at the roof and proceeding towards the floor. The two piles at one corner are inserted with their inclined sides bearing against each other, and in order to fit tight, to keep back the quick ground, it is necessary that these sides should be kept constantly against each other as they are being driven forward. Immediately after the piles have been thus inserted the closing boards are placed in position, bearing against the last door-set. As these closing boards are moved forward as the work proceeds, and since owing to the divergence of the side piles the space which they are required to cover becomes broader, gaps will be left at either side between the ends of the closing boards and the side piles. This space is stopped up by twisted pieces of straw and the like, which is kept ready twisted in considerable quantity for use; or, what is better still, the closing boards instead of being in single pieces, which extend from side to side the whole width of the level, are made in two halves, which overlap each other some few inches at the centre, and they can thus be pushed sideways close against the side piles as they are moved forward, and the width becomes greater. When this is the case it will be necessary to have a vertical prop placed opposite the lap of the closing boards, and from which they can be supported at their ends terminating in centre of the level. This prop is generally strutted by inclined bars at the foot and head against the legs of one of the adjoining cap pieces. When the closing boards have thus been placed in position the side and roof piles are driven successively a few inches forward. When the whole of the piles have thus been advanced the workman lifts one of the ends of the uppermost closing board somewhat out of its place, so as to allow a part of the ground to escape; or, if necessary, so that he can pull or scrape it out. When he has done this he quickly replaces the board, pushing it as far forward as he can, and at the same time keeping the end in close contact with the side piles. As the end will now be some distance from the door-set it must be spragged against the latter. Since the roof piles also diverge upwards as they are driven further into the ground, in order to keep the closing boards tight against the roof, they must be lifted somewhat each time they are pushed forward. In like manner the opposite end of the uppermost closing board is lifted from its place, part of the ground allowed to escape, the board end being then raised somewhat as it is replaced and spragged against the leg of the last door-set with a short piece of round wood. In a similar manner the next closing board below is advanced forwards and raised in position close against the first, and likewise spragged against the legs of the last door-set. In this manner each closing board is advanced until the whole of the face of the level has been advanced forward 3 in. or 4 in. The closing boards, however, should never be advanced forward as far as the ends of the piles; indeed, the latter should always project 4 in. or 5 in. in advance of the closing board. After the whole of the face has thus been advanced the same operations of driving forward the roof and side piles, and afterwards advancing the closing boards, are repeated until the level has been advanced so far forward as to give space for the insertion of a temporary door-set, which is afterwards replaced by one of the stronger permanent ones. Since the door-set (which is of the same exterior dimensions as the permanent door-set) does not fill the enlarged section of the level, wedges are placed between it and the roof and side piles. In cases where the circumstances allow of the sets of timbering being made longer auxiliary door-sets are laid between the so-called beginners of each set. It may be that during the driving forward of the roof piles the roof pressure is so great that there is a considerable liability to their being pushed downwards. In the case of a single pile it will suffice to insert a long bar beneath strutted against the last ground sill. Where a great number of piles require support a separate support for each would greatly confine the available space for the workmen engaged in advancing forward the closing boards. In such a case a long cross bar is placed beneath the roof piles near to the face, and is supported by means of two long bars or struts, which are attached to the cross bar beneath each end, the lower ends of the struts are fastened together, and rest upon one of the ground sills. The support has thus the shape of an isosceles triangle, with the base placed beneath the roof of the level and the apex on one of the ground sills.

* Being Notes on a Course of Lectures on Mining, delivered by Herr Bergrath Dr. VON GRODDECK, Director of the Royal Bergakademie, Clausthal, The Harz, North Germany.

INSTITUTION OF CIVIL ENGINEERS.

The usual annual Conversazione of the President of the Institution of Civil Engineers (Mr. J. F. Bateman, F.R.SS.L. and E.) was, by permission of the Secretary of State for India in Council, held in the India Museum, South Kensington, on Monday evening, and was largely attended by the members and associates of the Institution and their friends.

The Conversazione being held on the fiftieth anniversary of the incorporation of the society, must have called forth many interesting recollections in the minds of those who have watched the successful progress which the institution has been constantly making; and although, probably, few were present who have been members or associates for the entire half-century, we had the pleasure of seeing many whom we have been accustomed to meet in connection with it for more than half that period. Mr. Bateman may be congratulated upon having done something to restore the Conversazioni to what they were when the presidents were contented to invite their friends to the Institution's own house in Great George-street, for although the companionship of ladies is at all times agreeable, it cannot be denied that the invitation of them to a Conversazione which can be made to assume a utilitarian character does much to prevent such reference to technical details as would deprive the ladies of much of their pleasure, although professional men would much desire to possess them. From the Conversazioni at Great George-street many came away with much more practical knowledge than they possessed on entering, and it may be hoped that upon all future ones it will be justifiable to make an equally favourable statement.

The feature of the day is undoubtedly the progress of telephony, and on Monday evening abundant opportunity was afforded for judging of the progress made, and of the direction in which further research is likely to prove useful. The first place must naturally be given to the TELEPHONE of Prof. A. Graham Bell, which, whatever may have been previously done in the same direction, must, in common fairness, be regarded as the starting point of practical telephony. To enable the whole of the details of telephony to be thoroughly understood would really involve the writing of treatises on electricity, acoustics, and several other branches of science; yet a general outline may be given without difficulty. The action of the galvanic battery is pretty generally understood—it consists of a cell containing a fluid, usually a dilute acid (hydrochloric acid, for example), and two plates, such as platinum and zinc. If the two plates be connected with a wire a now well-understood action is set up, the zinc begins to dissolve, forming chloride of zinc, bubbles of hydrogen gas being liberated, and a current of electricity travels through the wire from the platinum to the zinc, the quantity of electricity generated being proportionate to the hydrogen liberated and zinc dissolved. The liberated hydrogen rushes to the platinum plate, and thus a circulation continues between the platinum and zinc through the wire, and between the zinc and platinum through the fluid, which is availed of in every application of electricity. Of the other means of generating electricity, of the different conditions of electricity, and of the precise nature of currents nothing need for the moment be said.

Now, the application of electricity to the controlling of sound waves has resulted in telephony. From the observation of the time which elapses between seeing the flash and hearing the report of a cannon fired at a distance we are enabled to conclude that sound has a measureable velocity. By standing at a suitable distance from the cannon the flash will be first seen, then the cloud of smoke, next the vibration of the ground will be felt, and lastly comes the sound wave in the shape of a delicate blast of air. This sound wave corresponds to the circles observed when a stone is thrown into water. The larger the waves the slower their motion, and the rate of motion of the sound wave determines the character of sound as felt or heard by the human ear. Helmholtz considers about 23 vibrations per minute the lowest number can be heard, and we all know that on a seven octave piano it is difficult to many persons to distinguish the lowest C from that an octave above it. It has been ascertained that 128 vibrations gives us the C in the second space of the bass stave, and again taking the authority of Helmholtz, the overtones are simple multiples of the fundamental, so that C on the ledger line below the treble or above the bass stave has 256 vibrations, the next higher C 512 vibrations, and so on. Or, that we may avoid fractions, we will say that the C with 256 vibrations is equal to 24 groups of vibrations; and then 24, 27, 30, 32, 36, 40, 43, and 48 groups of vibrations respectively will give one octave of the major scale.

We may assume that in ordinary conversation a man speaks on the note G, but he will never speak the whole of even one sentence in monotone of 384 vibrations to the word; and as every modulation from the true G will give a number of vibrations differing from 384 it will be obvious if the variations 380 vibrations, 386 vibrations, and so on, as the case may be, can be repeated with sufficient accuracy we shall have an exact repetition of the sentence spoken. This accurate repetition of numbers of vibrations differing from each other within a very limited range is really what Bell's telephone accomplishes; he succeeded in making the electric current reproduce all the complicated forms of air vibration or sound waves which the human voice produces. In the first form of speaking telephone a piece of gold-beaters skin was stretched over the end of a funnel, a small piece of iron being first glued in the centre of that side of the skin to go within the funnel. In front of this piece of iron an electro-magnet was so placed that the poles should be opposite without quite touching it. One of the terminal wires was connected with the battery, and the other with the wire leading to the distant station, where it was conducted to a receiving instrument consisting of a tubular electro-magnet, the coil being enclosed in a tube of soft iron, the connection with earth being made in the usual manner. On the top of the receiving instrument was a very thin loosely fitting disc of iron, which acted as an armature to the electro-magnet below it. If now by speaking into what we may call the bottle end of the funnel the gold-beaters skin were made to vibrate, the electro-magnet of the sending instrument was acted upon with a force exactly proportional to the number of vibrations of the iron on the gold-beaters skin, and the effect was accurately transferred to the receiving instrument. The telephone has since been slightly modified in form, so as to make it more convenient to use, but the principle remains unaltered.

It will thus be understood that on the telephone of Prof. Graham Bell the sound waves impressed on the transmitting disc are duplicated on the receiving disc, and that each given sound produces a definite form of vibration was admirably shown on Monday evening by means of the PHONEIDOSCOPE, exhibited by Messrs. S. C. Tisley and Co., of Brompton-road. This instrument is for showing the beautiful experiment arranged by Prof. Sedley Taylor, of Cambridge. The vibrations which constitute the tones of a human voice in singing or speaking are so complicated and subject to such fine shades of difference that it is difficult to understand how they can be taken up with that completeness already noticed. Attempts have been made to study the movements of vibrating plates by observing the behaviour of fine sand strewn over their surface. The grains of sand are found to collect themselves into fixed straight lines and curves, forming figures of great regularity and apparently endless variety of arrangement. The phoneidoscope employs a far more delicate medium of observation, and attains incomparably more beautiful results. The instrument consists of a vertical hollow cylinder surmounted by a horizontal ring, on which discs of corresponding size, pierced by apertures of various shapes, can be successively supported. A caoutchouc tube communicates at one end with the interior of the cylinder; its opposite end is fitted into a conical mouthpiece. When a film of soap-bubble solution has been caused to adhere to the edges of the orifice in one of the discs, and the disc has been placed on the supporting ring, the phoneidoscope is ready for service. The experimenter places the instrument between himself and a window, so as to catch the light reflected off the film, and, as soon as the ordinary interference-colours present themselves, sings a steady note into the mouthpiece of the tube. The sonorous vibrations thus set up are no sooner communicated to the film than a regular figure becomes visible, consisting generally of fixed coloured curvilinear bands symmetrically arranged, accompanied by pairs of stationary colour-whirls rotating in opposite directions. The slightest change of pitch is followed by an instantaneous alteration in the figure, which otherwise exhibits great constancy of form. Thus, if two given notes are sounded consecutively many times running, the two corresponding figures will recur with synchronising alternation. Each shade of pitch has thus its peculiar colour-figure. Further, sounds of identical pitch but diverse quality give rise to distinct forms. For example, if the same note be sounded into the mouthpiece of the phoneidoscope by a flute and a clarionet sharply marked differences will characterise the resulting figures. The same thing will occur when the vowel-sounds of the human voice are successively intoned on a single note. Each vowel calls forth its own colour-figure.

In addition to the varieties of form due to the pitch and quality of the exciting sound, there are others depending on the shape and size of the orifice to which the vibrating film adheres. Thus a triangular, a square, and a round aperture give quite distinct figures with the same sound, and a large circle a different figure from a small one. Since the exact tint of the colour shown by the film at any given point depends on its degree of tenuity at that point, it is evident that the progressive thinning of the reflecting medium must materially affect the assemblage of hues presented. Accordingly a series of colour-changes, sometimes of a most gorgeous character, regularly accompany the advancing tenuity of the film from the moment when the first tints show themselves up to that at which, if the film holds out so long without breaking, the medium becomes too thin to reflect any light at all, and an intense darkness spreads itself over the whole field save, perhaps, where a few illuminated specks, the remnants of extinct colour-whirls, are still seen flying round their former orbits. It will be manifest from the foregoing description that the phoneidoscope affords a practically infinite variety of singularly interesting and beautiful phenomena.

Amongst the other exhibits may be mentioned the Logograph shown by Mr. W. H. Barlow, F.R.S., V.P.I.C.E.; a Diving Helmet fitted with a Telephone, exhibited by Messrs. Siebe and Gorman, the well-known submarine engineers; Byrne's Pneumatic Battery, exhibited by Mr. W. Ladd, of Beak-street, whose name has long been familiar to all users of philosophical apparatus; and the Telephone Alarum, exhibited by Mr. Conrad W. Cooke. But the instrument which naturally attracted the largest amount of attention (because it was the most noisy) was the PHONOGRAPH, exhibited by the London Stereoscopic Company. The history and rapid development of the phonograph is not less interesting than that of the telephone. When the specimen instruments were first brought over to this country by Mr. Edison's agent (and it should be remarked that just as Mr. Bell is entitled to every credit for the invention of the telephone, so Mr. Edison is entitled to all honour for the invention of the phonograph) Mr. Preece lost no time in bringing the discovery to the notice of the Society of Telegraph Engineers, yet working only upon the published descriptions, the scientific mecanicians of this country had already been able to effect improvements which were exhibited simultaneously—the instruments of Edison, of Pigeon, and of Stroh being shown at the same meeting. All three instruments possess the brass cylinder with the spiral groove, on which the tinfoil is laid, but Mr. Edison's dispenses with one of the diaphragms (the reproducer), and utilises the other as both recorder and reproducer. As before explained, that consists of a metallic disc, with a steel point firmly fixed to its centre. The sheet of tinfoil wrapped around the cylinder is made to pass under this point in such a manner that the latter would trace on its surface a spiral line of slight pitch, corresponding to the groove in the cylinder; and a message having been spoken to the diaphragm, and the point brought back to its starting-place, the diaphragm would utter, in a purely mechanical way, the very words which caused the original vibrations. In Mr. Pigeon's instrument, which is constructed according to the description given of the first phonograph, the reproducer has a more sensitive diaphragm of paper, which will probably be found eventually to give the best results. It will be obvious that

if indentations in a strip of tinfoil made by a style actuated by the vibrations of a diaphragm are capable of reproducing the original vibrations, and consequently the original sounds, the strip of foil must be carried beneath the pointer of the reproducer at exactly the same speed as it passed under the pointer of the recorder, and the difficulty of synchronising the two operations was found to be the greatest stumbling-block in perfecting the instrument. In Edison's phonograph, as sent to this country, the screwed axis carrying the cylinder is provided with a heavy fly-wheel, to control, as far as may be, the rate of rotation; but even with that adjunct it is almost impossible to keep exact time. Mr. Stroh has dispensed with the fly-wheel, and adapted an ingenious form of governor or fan, which regulates in a very satisfactory manner the motion of the cylinder. It was, however, suggested at first that the best method of securing perfectly synchronous action would be found in the use of clock-work to drive the phonograph, because then, no matter at what rate the cylinder had been revolved in recording the words, it would, if that rate were known, be easy to reproduce it exactly. The instrument used on Monday evening was certainly most communicative, the phrases repeated being as clear and audible as could be desired, though as free from music as the voice of Lord Frederick Cavendish and others who practice a similar style of oratory. After some preliminary observations the instrument sang in stentorian if not very harmonious style an entire stanza, we presume, or perhaps it is the chorus only of "Tommy make room for your uncle," concluding with a hearty grin, such as might reasonably be expected from a dozen jovial companions who had not limited themselves to "the cup that cheers but not inebriates." That the phonograph has a great future before it cannot be doubted, but in what direction it may be developed has yet to be ascertained; but it may be suggested that if it be used by Her Majesty for conveying by her own mouth a message of love to her loyal subjects in Canada, Australia, and any other of the colonies, they must first be cautioned against supposing that the phonograph truly re-echoes the musical sweetness of her voice, since it rather represents what it would probably sound like if she shouted through a fog-horn during a storm at sea.

Upon leaving the phonograph we were again arrested in our progress toward the exit by Prof. Hughes' MICROPHONE, another admirable invention of the same class. The inventor's name is already well known in connection with the printing telegraph, and from the ingenuity and simplicity of his improvement on the telephone it is likely to become still further celebrated. Two common French wire nails are fastened down to a board about their own thickness apart, a wire from one leading to the battery, while the other is connected by a line wire to a Bell's telephone, which is also connected by another line wire to the battery, thus completing the circuit, when another nail is laid at right angles across the two fixed to the board. The third nail, it will be understood, touches each of the others in a mere point, for, all being circular, no greater surfaces can be in contact; but it will scarcely be credited that on speaking to or at the nails the words are transmitted by the nails to the telephone, and are distinct and clear at the distant end of the line. This arrangement, simple as it is, is not the most sensitive telephone that can be constructed. The most extraordinary instrument consists of a simple piece of thin pine, glued to a tolerably stout base-board in such a manner that a section would have the form of the letter L. To the anterior surface of the upright limb or sound-board (the thin piece of pine) two small blocks of carbon are secured, in the opposite faces of which two hollows or cups are cut, which receive the pointed ends of a stick of gas carbon, such as is employed for the electric lamp. The wire from a small battery passes through the sound-board and enters one of the carbon blocks, and the line-wire enters the other, the circuit being completed some miles distant by the wire from the battery, and the line-wire being connected to a Bell's telephone. The transmitting instrument is thus a vertical rod of carbon supported by carbon blocks attached to a thin piece of wood. On speaking to the latter the vibrations are transmitted to the diaphragm of the telephone, which may be many miles distant, and are there reproduced in loud and distinct tones. If the base-board itself is merely brushed with a feather a loud grating noise is heard in the telephone at the receiving end of the line, and it is said that even the footfalls of a house-fly can be distinctly appreciated by the ear of the listener at the telephone, the result probably being due to the rapid alternations of the electric current. By means of two little cylinders of platinised pumice immersed in the solution of a salt, such as sulphate of potassium or alum, it is possible with an instrument quite similar to the microphone to hear the crystallisation of the salt, and it is confidently believed that no motion, molecular or otherwise, can take place in objects connected with the microphone without being detected.

The last exhibit of this class, which although close to the exit was not the less attractive and ingenious, was the PHONOSCOPE, invented and exhibited by Mr. Henry Edmunds, jun. To describe the invention briefly and popularly it may be said that the phonic vibrations are transmitted from the sender to the receiving instrument by the usual method of telephonic transmission, but that the receiving disc is replaced by a Geissler tube turning on a horizontal axis, and as the current passes the speed of rotation varies with the number and character of the vibrations causing the transmission, so that the transmission of the C of 128 vibrations produces so slow a rate of rotation as to give the appearance of a brilliantly illuminated open star; the C an octave higher (256 vibrations) produces a continuous disc of colour, every note sounded into the transmitter producing a definite and invariable star or disc of light, the particularly deep tones of one of the visitors producing a star, the points of which could almost be counted with the naked eye.

In the balcony electric lights for illuminating distant objects were shown by Dr. C. W. Siemens; and in the gallery Mr. A. M. Silber exhibited an effective and very simple arrangement of flashing signal lamp, which only requires to be tested to ensure its coming into use.

The Conversazione was altogether a great success, and contrasted greatly with those by which the members' time has for the last few years been literally wasted.

SAFETY LAMPS—THEIR USE IN FIERY MINES.

At the ordinary meeting of the North Staffordshire Mining Institute, at Stoke-upon-Trent, on Monday—Mr. J. Strick (President) in the chair—a paper on Safety Lamps was read by Mr. John Williamson, of Hednesford, in the course of which he said: While great improvements have been made during the last forty years in winding, pumping, and hauling engines, and apparatus for ventilation purposes, the safety lamp remains in almost its primitive state. It will do no more now and is no safer than when it was first used. If one thing more than another requires attention it is the safety lamp. The firing of a shot, the closing of doors, or the fall of a roof is sufficient to cause the Davy, the Clanny, or the Meuseler lamp, when in use in an explosive mixture, to explode. The Stephenson lamp is the safest in use, and the only thing which prevents its general adoption is the insufficient light it affords to the miner; but even with its dim light it is preferable to any of the lamps previously mentioned, and, if properly used, no explosion can possibly take place from it. I have endeavoured to produce a lamp which contains the elements of the Stephenson and the Clanny, and the light in it is superior to that of the Clanny, and it is not easily extinguished when exposed to air travelling at high velocity. As a fireman's lamp it is invaluable. When approaching a body of gas the top can be seen clearly, and if the lamp is plunged into a body of gas it is extinguished before sufficient heat is generated to harm it. Externally the lamp has the appearance of the Clanny, the oil vessel and wick arrangement being the same. It contains two glass cylinders—one external and similar to the Clanny, the other internal and similar to the Stephenson lamp. The inner ring which carries the glass in the Clanny differs from mine, and therein is the improvement. In this the air is admitted through a perforated portion of the bottom part of the lamp, and the inner ring is arranged to carry the two glasses, and when screwed up and the lamp is in working order, the cap of the inner glass presses gently against the top of the gauze. The air is made to pass through the bottom part of the lamp and through the gauze fixed on the periphery of the inner ring and on to the flame. It is a double safety lamp. Stripped of the outer glass and gauze, so long as the inner glass remains intact the lamp is safe. I believe an Act of Parliament will be passed shortly prohibiting the use of naked lights in mines and enforcing the use of safety lamps. Such a change could not fail to give satisfaction, and to do more towards increasing the safety of the miner than all former Acts.

Mr. T. Evans, Government Inspector of Mines for Derbyshire, said unquestionably fiery mines ought to be worked with safety lamps, and if they were so fiery as not to be safely worked with naked lights, powder ought to be disused. But in the district under his supervision safety lamps were only used in one or two collieries, and statistics showed that thirteen millions and a-half tons of minerals were raised with the loss of only one life by an explosion of gas. Let them not run away with the idea that there were no explosions where safety lamps were in use, for the heaviest explosions had occurred where there were lamps. He did not advocate the disuse of lamps in fiery seams; but men were too apt to use the lamps at the expense of ventilation. The Davy lamp was now as it was at the beginning, and the objection to the Stephenson had been rightly stated by Mr. Williamson. It gave a poor light, and defective lights sometimes produced accidents.

THE PARIS INTERNATIONAL EXHIBITION.

No. IV.

[FROM OUR OWN CORRESPONDENTS.]

It is very gratifying to be able to state that the upper portion of the dome of the Trocadéro Palace has been divested of its unsightly scaffolding, and that in its place the summit is crowned by a large sized gilded figure, draped as a female, with outspread wings, holding in one hand a trumpet, and wreaths in the other, and appears to be in the act of announcing by the blast of trumpet the achievement of some great event in the world's history. The figure looks towards the Champ de Mars, on the opposite side of the Seine, where the great national show is exhibited, and its gestures very properly imply a *fait accompli*. We understand the internal arrangements of the theatre, and the necessary work to be performed there, are fast drawing towards completion, and that we may soon look forward to its being opened with due ceremony.

A matter of great interest and of considerable importance connected with the Exhibition took place at the Cercle National on the 24th ult., when a banquet was given by the deputies to the heads of the different official representatives of the International Exhibition, and to foreign delegates. At this gathering M. Gambetta was received enthusiastically, and in a speech of considerable length said he was happy to welcome *de bon cœur* those who were present, and who were active, zealous, and ingenious representatives of the universal industry, and who were assembled in Paris—the centre of all these treasures and incomparable wonders, which the whole world had been willing to trust to the honesty and loyalty of the French Republic. At this point the popular Senator paid a very handsome compliment to Mr. Owen, the secretary to the Royal Commission, and who has by his indomitable energy and great ability done so much towards perfecting the arrangements connected with the English section, and to all the other gentlemen who were associated with the Exhibition, but whose names it was then impossible to mention, but who would, nevertheless, remain engraven in the memories of the French people, and that in coming among them they had become the missionaries of that which was considered among men the most noble—delegates of labour. A very high tribute of esteem was paid by the speaker to the English nation generally, which he said had displayed great energy and honesty of purpose in their associations with France in bringing the great International Exhibition to a successful issue, which in two words meant peace and labour. From this we gather that in future the bond of amity between France and England will prove indissoluble.

It will be remembered that in a preceding article we referred to the space set apart for the Australian colonies, and to certain gilt models representing the amount of gold obtained from some of the colonial mines by certain companies engaged in mining—in Victoria. We now give the weight and value of the gold, and also the number of tons of quartz from which the gold was obtained. The first model pyramid or trophy found in this section represents the bulk of gold raised by the Pleasant Creek Cross Reef Gold Mining Company, Stawell. It is about 8 ft. high, with a base of about 2½ ft. square, and is valued at 1,000,000*l.* The second pyramid or trophy represents the bulk of gold extracted from mines belonging to the Port Phillip and Colonial Gold Mining Company, Clunes, Victoria, weighing 352,584 ozs., and being valued at 1,410 330*l.*, the gold having been obtained from 985,165 tons of quartz. This pyramid is estimated to be 12 ft. in height, and surrounding its base there are 24 smaller gilt models or cakes of retorted gold. From these particulars we deduce that each ton of quartz gave a yield of 2·8 oz. of gold; the gross value of the raw material was, therefore, 11*l.* 4s. per ton. The form of these models is cylindrical, ending in a semi-spherical form, these representing the produce of the mines in the district of Bendigo—that is, the great extended Hustlers Company's Mines, Garden Gulley United Company's Mine, and Lazarus Mining Company's Mine. The first company supplied ten models, which were raised each in 14 days, and the weight, value, and number of tons of quartz from which the gold was obtained are as follows:—from 498 tons of quartz, raised in 14 days, 2586 ozs. were obtained, the value being 10,150*l.*; from 480 tons of quartz, raised in 14 days, 2277 ozs. were obtained, valued at 8937*l.*; from 514 tons of quartz, raised in 14 days, 2526 ozs. were obtained, valued at 10,055*l.*; from 524 tons of quartz, raised in 14 days, 3146 ozs. were obtained, being valued at 12,348*l.*; from 642 tons of quartz, raised in 14 days, 4012 ozs. were obtained, which is valued at 15,747*l.*; from 564 tons of quartz, raised in 14 days, 2936 ozs. were obtained, valued at 11,523*l.*; from 420 tons of quartz, raised in 14 days, 2399 ozs. were obtained, valued at 9416*l.*; from 628 tons of quartz, raised in 14 days, 3900 ozs. were obtained, giving the value of 15,307*l.*; from 455 tons of quartz, raised in 14 days, 2608 ozs. were obtained, valued at 7881*l.*; and from 488 tons of quartz, raised in 14 days, 2694 ozs. were obtained, which is valued at 10,573*l.* This company has, therefore, raised 5213 tons of quartz in 140 days, giving a total of 29,210 ozs. of gold of the aggregate value of 1,021,937*l.*, the time in which all this has been done being less than half a year in working days, the mine yielding 5·06 ozs. per ton, which at the rate of 4*l.* per oz. would be 22*l.* 8s. per ton of quartz. The following table of particulars refers to the Garden Gulley United Company's Mine:—

No. of models.	Tons of quartz.	Days occupied in raising.	Ounces of gold extracted.	Value.
1	548	14	4,885	£19,173
1	308	14	1,833	7,194
1	316	14	3,868	15,181
1	574	14	4,493	17,635
1	574	14	4,493	17,635
1	324	14	1,637	6,435
1	268	14	1,233	4,839
7	3112	98	22,442	£88,092

It will be observed that in the short space of 98 days this company raised 3112 tons of quartz, from which they obtained 22,442 ozs. of gold, of an aggregate value of 88,092*l.*, each ton of quartz yielding 7·21 ozs. of gold, and the worth of the raw material—quartz—was 28*l.* 16s. per ton. In round numbers this gave 898*l.* 16s. per day, or a gross sum of 269,640*l.* per year of 300 working days. We cannot suppose that the capital spent was more than 100,000*l.*, but assuming that it was so, a dividend of 100 per cent. would seem to be derived. It is highly probable that a less capital was spent, or at least should have been spent. We are unable, however, to give a statement of the amount of capital invested. The following table of particulars refers to the Lazarus Gold Mining Company:—

No. of models.	Tons of quartz.	Days occupied in raising.	Ounces of gold extracted.	Value.
1	416	14	2,443	£ 9,588
1	198	14	714	2,802
1	166	14	536	2,103
1	441	14	1,335	5,239
1	222	14	409	1,605
1	360	14	1,298	5,094
1	204	14	1,050	4,121
7	2007	98	7,785	£30,552

From these statistics, it will be seen that this company raised 2007 tons of quartz from their mines in 98 days, the total yield of gold being 7785 ozs., of an aggregate value of 30,552*l.* Each ton of quartz yielded 3·87 ozs. of gold per ton, which, at 4*l.* per oz., would give a gross value of 15*l.* 4s. 5d. per ton for all the quartz raised. This mine appears to have yielded a gross sum of 311*l.* 15s. per day, or a gross sum of 93,525*l.* per annum. The Long Tunnel Gold Mining Company, Walhalla, exhibits a trophy, numbered 2446, in this section of a cubical form, representing the exact bulk of gold taken from their mines from January, 1869, to September, 1877, the weight this trophy represents amounts to 221,262 ozs., of the value of 885,048*l.* Taking the time occupied in raising this quantity of gold at eight years, it would give an income of 110,631*l.* per annum. The Walhalla Gold Mining Company, Walhalla, also exhibits a trophy numbered 2464; it is also in a cubical form, and represents the exact bulk of gold taken from the mine. The quantity of gold which was obtained by this company is 126,052 ozs. troy, and was obtained from February, 1863, to August, 1867; it is of the value of 504,208, and taking the time of extraction at 14 years, gives a gross income of 36,014*l.* Near the centre of this section will be found a large glass case containing models of 24 nuggets of gold, which have been found at different places in Victoria from time to time; among the these are to be found the "Welcome," discovered in 1858 at Ballarat. It weighed 2195 ozs. The "Precious" nugget was discovered in 1871, 12 ft. below the surface; it weighed 621 ozs., and its quality 23⅛ carats. The "Viscount Canterbury," discovered in 1870, 15 ft. below the furface, weighed 1105 ozs. The "Viscountess Canterbury" was discovered 6 feet below the surface, weighing 884 ozs. The "Platypus," discovered in 1871 at Bendigo, weighed 377 ozs. The "Beauty," found in 1858 at Bendigo, 9 ft. from the surface, weighed 242 ozs. The "Schlemm," discovered in 1872, at a depth of 3 ft. below the surface, weighed 478 ozs. The "Kum Toon" was found at a depth of 12 ft. below the surface, by a party of Chinamen; it weighed 718 ozs. "The Needful" was discovered at 12 ft. below the surface, and weighed 246 ozs. The "Crescent" was found in 1872 at 2 ft. below the surface, and weighed 176 ozs. The "Alma" was found in 1873, and weighed 125 ozs. The remaining ones are of smaller dimensions.

The whole area of the colony of Victoria is 88,198 square miles, or 56,446,720 acres, or about one thirty-fourth part of the entire continent of Australia. Victoria is 1466 square miles less than Great Britain. In 1871 the proportion of the population to the area of land was 1 to 77 acres, whereas in England and Wales it is about 1 to 3 3-5ths. The former would give 8 persons to the square mile, and the latter 389 persons to the square mile. The population of Victoria was 224 in 1836, and 1876 it amounted to 840 300, and in 1877 it increased to 849,021. In 1876 the land under cultivation was 1,231,105 acres. During the same year the imports were valued at 15,705,354*l.*; the exports for the same year were 14,196,487*l.* The revenue derived in 1876 amounted to 4,325,156*l.*, and the total amount of gold produced in 1876 was 4,788,300,300 francs, or 192,532,000*l.* All this has been accomplished by the colony of Victoria alone within the space of 40 years, during which period the population increased 840,076. The resources of the Australian continent are so immense that we have no hesitation in stating it as our positive belief that upon its inevitable progression and development it will in future ages become the great British Empire of the world. This may be considered strong utterances, but we are, however, convinced it will prove true. Victoria and the adjacent colonies possess many rich gold-bearing lodes or reefs, and which when properly operated upon will, no doubt, prove very remenerative to capitalists embarking in such undertakings. There is at present a vast amount of capital locked up in bankers' chests useless, so to speak, which could be employed to great advantage provided capitalists were satisfied of the *bona fides* of such business matters as are commonly presented to them. At the present time the spirit of speculation is almost dormant, consequent upon the apparent destruction of the peace of the world by an iniquitous power. We have had considerable experience in Australia, and we venture to assume that English capitalists would do well to consider the great advantages presented to them for realising large dividends upon the capital invested in gold mining there. We regret that it has not been found possible at present to give further particulars respecting the companies already engaged there. It would have been a matter of great importance if the Government of Victoria could have given a statement as to the amount of capital actually spent at each of the mines which are represented at the Paris Exhibition, the public would then have been in a good position to determine for themselves what profits have been received from the mines in question.

We have good reason, however, to assume that they are very large. The figures quoted alone are, in our opinion, sufficient evidence of this. One thing is very clear—*i.e.*, that gold will always command a ready and immediate market the moment it is obtained from the matrix, and the great advantage connected with it of being able at a moment's notice to realise a certain fixed value cannot be said generally of other manufactures. The law of demand and supply affects the latter in a far greater degree than it does the former. It is, therefore, a matter of surprise that capitalists do not consider this question more closely than they appear to do.

If they were to do so we venture to believe gold mining in the Australian colonies would receive greater attention than at present.

We are pleased to have the opportunity of stating that we have received very great courtesy from Mr. P. Cunliffe Owen, C.B., secretary of the Royal Commission for the English department; from Mr. G. Collins Levy, secretary to the Commission of Victoria; and from Mr. Jules Joubert, secretary to the Commissioners of New South Wales. The two former have, with great liberality, presented us with copies of the catalogue of their respective sections, and the latter has promised to afford every information in his power.

In the Victoria Department we find the first group consists of works of art, and Class 1 refers to oil paintings—paintings on canvas, upon panel, and on other grounds. In this class there are five exhibits, all of which are well executed. Class 3 refers to sculpture and die sinking—sculpture in high relief, bas-relief, chased, and repoussé work, medals, engraved stones, Niells work. Under this head are two cases of exhibits, one of which was supplied by the Trustees of Public Library, Melbourne. Class 5 embraces engravings and lithographs—engravings, coloured engravings, lithographs executed with pencil and with brush, chromo-lithographs. Under this head are 14 exhibits—*i.e.*, from 8 to 20 inclusive. The second group refers to education and apparatus, and processes of the liberal arts, and is included in Class 6. Under this head we have 14 groups of exhibits—*i.e.*, from 21 to 34 inclusive. The first of these (21) is a beautifully constructed model in wood and cardboard of a State school building from William's Town, Victoria, capable of accommodating 800 scholars, showing all the internal fittings and furniture. It was executed by Mr. F. M. Hynes, of Melbourne, and is a very artistic production. We must not forget to mention that the exhibit No. 22 is a book of photographs and plans of 55 State schools, erected by the Department of Public Instruction in different districts of the colony of Victoria. This is very important, as showing the great progress made by the colony in educational pursuits. Class 9 refers to printing books, all of which appear to be published by the exhibitors in the colony. These exhibits are numbered from 35 to 401 inclusive, many of which are very important, such as No. 42, consisting of a descriptive catalogue of the mining, &c., models in the National Museum, Melbourne. No. 51. Statistical register of the colony of Victoria for the year 1874. No. 88 agriculture in South Australia. No. 93. Gold mining; its results and its requirements. Catalogue of forest trees, fruit trees, plants, coniferæ, shrubs, hardy trees, &c., cultivated in Victoria. No. 183. Geological Survey of Victoria—progress reports for 1873-74. Nos. 188 and 189. Meteorogical and magnetical observations. No. 191. Mineral Statistics of Victoria for the year 1873. No. 202. Statistics of the New North Clunes Gold Mining Company. No. 201. Transactions of the Mining Institute of Victoria. No. 203. Statistics of the Ilfracombe Iron Mine. No. 205. Gold fields and mineral statistics. No. 206. Statistics of the Walhalla Gold Mining Company. No. 289. Mining company's register book and No. 351. Reports on the Geological Survey of Victoria. Class 10 refers to stationery, bookbinding, painting, and drawing materials. These range from No. 402 to 414 inclusive. Class 11 includes general

application of the arts of drawing and modelling. Models and small articulated wooden models of figures, ornaments, &c. Exhibits from 415 to 419 inclusive were supplied by the Commissioners for Victoria at the Paris Exhibition, No. 415 is a life-sized model of a Victorian gold miner fully equipped. No. 416 represents a stock-rider. No. 417 is a male aboriginal native. No. 418 is a female native or lubra, carrying a child or picaninny on her shoulders, the latter being numbered 419. These figures are ranged at each angle of a large stand near the centre of the section, and were modelled in wax and papier maché by Mr. R. Kreitmeyer, Waxworks, Melbourne, and are very interesting. This stand is surmounted by a life-sized figure in bronze, representing Peace and Plenty, and carries in its hand a small sheaf of corn in one ear. It is also surrounded by other native implements and colonial flags. Class 12 refers to photographic proofs and apparatus, and numbered from 420 to 532. In this collection there are books containing a splendid collection of photographs of interesting places and buildings in the colony.

Class 14 refers to medicine, and instruments used in the profession. The exhibits are numbered from 533 to 535. Class 15 refers to mathematical and philosophical instruments, and under this head there is only one exhibit, numbered 536. Class 16 refers to maps, and geographical and cosmographical apparatus, and under this head the exhibits are numbered from 537 to 683. The Department of Mines also furnishes geological maps. The exhibit 667A is a geological sketch map of Australia, including Tasmania; 668A, geological sketch map of Victoria; 669A, geological sketch map of the Cape Otway district; 670A, geological map of Ballarat gold field, with notes and sections; 671A, geological map of the Sandhurst gold field; 672A, geological map of the Ararat gold field, and section; 673A, geological map of part of the Mitchell River division of the the Gippsland mining district, with sections; 674A, geological map of the parish of Beechworth; 775A, map of Victoria, showing the distribution of forest trees. Class 17 refers to cheap and fancy furniture, and under this head there are two groups of exhibits, numbered 676A and 679B. Group 3 includes Class 18, which refers to upholsterers' and decorators' work, numbered from 677A to 678A. Class 19 includes crystal, glass, and stained glass, numbered from 679A to 680A. Class 20 refers to pottery, and the exhibits are numbered 681A, 682A, and 683A, also 684, 685, 686, 687, 688, 689, and 690 respectively. Class 22 refers to paper-hangings, this exhibit being numbered 691. Class 24 includes goldsmith's and silversmith's work, and the exhibits are numbered from 692 to 696 inclusive. Class 26 includes clocks and watches. The exhibits are numbered 697. Class 27 refers to apparatus and processes for heating and lighting, and the exhibits are numbered 698 to 704 inclusive. Class 29 refers to leather work and fancy articles, with basket work. This exhibit is numbered 705.

The fourth group includes class 31, which refers to thread and fabrics of flax, hemp, &c. The exhibits are numbered from 706 to 712. Class 32 takes in worsted yarn and fabrics. These exhibits are numbered 715 and 716 respectively. Class 33 refers to woollen yarns and fabrics, and the exhibits are numbered from 717 to 733 inclusive. Class 34 includes silk and silk fabrics. The exhibits are numbered from 734 to 740. Class 35 refers to shawls; the exhibit is numbered 741. Classes 36 and 38 refers to lace, net, embroidery and trimmings, and clothing for both sexes. The exhibits are numbered from 742 to 765 inclusive. Class 39 refers to jewellery and precious stones, and the exhibits are numbered 766 to 856 inclusive. Class 40 refers to portable weapons and shooting equipments, including those of the aboriginal inhabitants of Victoria. The exhibits are numbered from 856A to 894 inclusive. Class 51 includes travelling apparatus and camp equipage, and the exhibits are numbered from 895 to 897A. Class 42 refers to toys; this exhibit is numbered 898.

The fifth group includes mining industries, raw and manufactured products. Class 42 is contained in it, and takes in mining and metallurgy. Bright Brothers, merchants, of Melbourne, exhibit, under 899, star antimony in plates and cases. Exhibits 900 and 901 refer to improved patent horse-shoes. From 902 to 904 inclusive the Commissioners for Victoria exhibit iron in pigs, tin in pigs, and lead in pigs. 905 is an exhibit of gold leaf. We have previously referred to the facsimiles of nuggets, numbered from 906 to 930 inclusive. The exhibits from 931 to 943 inclusive include black oxide of manganese, limonite, antimony ore, lead ore, iron ore, magnetic iron ore, crystallised hematite, brown hematite, magnetic oxide, tin, mineralogical and geological specimens from the Victoria Mining Department, and lead. From 945 to 953 inclusive we have quartz specimens from different mining companies in the colony. The total number of specimens exhibited by the Department of Mines in the colony of Victoria is stated to amount to 1614, arranged in three different collections—*i.e.*, rock collections, 831; mineral collection, 326; economic collection, 342. If it is meant that these latter numbers shall make up the first number we fail to see it. The rock collection contains representative specimens of the different geological formations occurring in Victoria, and is classified as follows:—From the older igneous or plutonic rocks, such as granites, porphyries, &c., there are 140 specimens; from the newer igneous or volcanic rocks, such as older and newer basalt, there are 193 specimens; from those denominated aqueous rocks or lower palæozoic, including rocks of this age metamorphosed by contact with granite and other igneous rocks, there are from the lower silurian, 21 specimens; upper silurian, 71; upper and lower Devonian, 13; upper palæozoic, 21; mesozoic, 33; tertiary, 139. The mineral collection contains 326 specimens, including specimens of nearly all the different species and varieties of some hitherto observed in Victoria. In the Economic collection referring to auriferous quartz, illustrative gold-bearing specimens from some of the principal quartz reefs at present in work in the several mining districts of Victoria, there are 171 specimens. This collection is accompanied by an index map, showing the areas comprised in the mining districts. The alluvium collection comprises 77 samples of wash-dirt and cement from the most important auriferous leads and deposits in the several mining districts of the colony. Of the minerals of economic value there are 71 samples collected, all or which are more or less mined for in Victoria. We think it will prove of general interest to the public if we give a more detailed description of the rocks of Victoria, stating at the same time, the kind of minerals associated therewith. This is a kind of knowledge which from a geological, mineralogical, and practical mining and commercial point of view cannot be too widely circulated. The granites obtained from the older igneous or plutonic rocks are found in the exhibits numbering from 944 to 1003. The specimens numbered 1003, in addition to the ordinary constituents of granite, are impregnated with iron and arsenical pyrites and gold. The fact of the impregnation of gold in this granite is of special interest, as being the second in proof of an occurrence generally considered as very doubtful—first proof having been afforded by the granite veins intersecting the Nuggety Reef, Maldon. The gold occurs in the granite under notice in small specks in more or less connected thin strings of quartz in joints and seams, coloured yellowish-brown by hydrous oxide of iron, and in cavities containing pyrites and hydrous oxide of iron; but it is also distinctly seen in some places right in the centre of what appears to be isolated quartz grains—genuine granite quartz—surrounded by felspar. Bulk assays of the stone have produced 19 dwts. 14 grs. of gold per ton. The dyke is 24 ft. wide, and traverses at a bearing of 10° 45' E. of N., with steep westerly underlay, common gneiss, and gneiss granite, rich in black mica. The exhibit 1004 refers to tin granite; fine-grained and nearly binary mica being very scarce. The mass of the granite is abundantly traversed by thin seams of iron pyrites, copper pyrites, arsenical pyrites, and tin ore; one face of the specimen represents a vein showing these minerals. It was obtained from Beechworth. 1005 and 1006 are other exhibits of tin granite. Specimen 1007 is rich in black tourmaline. Exhibits numbered 1008, 1009, and 1010 are gneiss and graphic granite. The exhibits from 1011 to 1020 are those of syenite. Granite and granite porphyry are exhibited, and numbered 1021 to 1025. Felsite and felstone elvanite are numbered from 1026 to 1037 inclusive. Pitchstone and felsite porphyry is exhibited, and numbered from 1038 to 1054 inclusive. Two specimens of plagioclase felstone are numbered 1055 and 1056. The former is traversed by quartz veins impregnated with auriferous, arsenical, and iron pyrites. The latter also contains iron pyrites, and is traversed by ferruginous gold-bearing quartz veins. 1057 to 1062 are exhibits of diorite. The first-named contains impure brown iron ore, and the latter is impregnated with copper pyrites. Quartz diorite are numbered from 1063 to 1069 inclusive.

The exhibit numbered 1070 is quartz mica diorite, and is impregnated with iron and arsenical pyrites, and is also traversed by auriferous quartz veins. It was obtained from a dyke called Kangaroo Reef, Acheron Diggings. It has been experimented upon, a crushing of which produced 15 ozs. of gold per ton, and we consider this is a matter worthy of notice. 1071 is a similar but more inferior specimen. The exhibit numbered 1072 is that of felspar porphyrite. It is remarkable for containing small crystals of red garnet. The exhibits numbered 1073 and 1074 are those of quartz ecklogite, and contain quartz and brown garnet. The exhibits from 1075 to 1083 inclusive are those of diabasi, gabro, serpentine rock, and epidosite. From the newer igneous or volcanic rocks, older basalt of the age between eocene and older pliocene tertiary, there are exhibited, from 1084 to 1091 inclusive, specimens of anamesite and basalt. From the newer basalt, of the age from pliocene tertiary to recent, there are exhibited, from 1092 to 1105, specimens of dolerite. The exhibits from 1106 to 1173 are those representing specimens of anamesite. Exhibits from 1174 to 1276 inclusive, consist of basalt, basalt scoriæ, basalt agglomerate, breccia, ash conglomerate, and basalt ash. That of 1211 is one of remarkable interest, as will be seen from the following analysis of it:—

	Soluble portion.	Insoluble portion.
Silica	34·80	63·39
Alumina	38·58	16·11
Manganese protoxide	Trace.	1·01
Iron sesquioxide	18·07	10·03
Lime	7·12	5·26
Magnesia	Trace.	3·41
Potash	—	2·21
Soda		
Titanic acid	—	0·63
Water	1·43	—
Oxide of copper	—	Trace.
Total	100·00	102·35

SELF MOVING STONE BREAKER.

In connection with the economic treatment of minerals the improvements in machinery introduced during the past quarter of a century have been very numerous, and the stone breaker, which previous to about 1860 was altogether unknown, has now become an absolute necessity not only to miners but to all who have anything to do with reduction of rock or stone to fragments which can be more readily handled. Among the latest improvements in stone and ore crushing machines is the self-moving stone breaker now being manufactured by the Savile-street Foundry and Engineering Company of Sheffield, and which is known as Hall's patent multiple action stone breaker. Several new adaptations of the machine have been successfully carried out, and special attention is being given to the construction of machines suitable for contractors' purposes, railway engineers, concrete builders, &c., besides the host of other requirements for mining and road purposes. One of the new machines has just been shipped to the order of Messrs. Wm. Bird and Co., of London. It consists of a strong trolly mounted upon four flanged railway-truck wheels, with one of the multiple action stone breakers secured over the driving wheels; at the other end is a vertical boiler and engine of neat design, having a fly-wheel at one end of the crank shaft and at the other a chain pinion with a square clutch at the back, which is thrown in and out of gear by a lever worked from the foot-plate; a second motion shaft with a chain wheel and a pinion gearing into a spur wheel on the driving axle. A speed of three miles per hour is attained by the engine making 125 revolutions per minute. The engine has a single cylinder 8½ in. diameter by 12-in. stroke, and is fitted with link motion reversing gear worked by a lever and notched quadrant. A neat governor regulates the speed of the engine, and the same is mounted upon a cast-iron base plate, which is a tank and feed water heater with a pump feeding the boiler. A convenient space is left between the boiler and machine for stoking and storing the coals, and a sheet-iron awning is placed over head. The driving chain for the self-propelling motion is of the best case-hardened Low Moor iron with steel pins. In making docks, reservoirs, piers, main roads, or railways, where large amounts of concrete or ballasting are required, it not unfrequently happens that quantities of rubble stone or solid rock is met with, and under the ordinary method of preparing such material for the purpose it is intended eventually for by a fixed stone breaker, all this material must be loaded and conveyed to and from the machine, involving a heavy cost in labour and moving, and the necessity for accumulating at one spot a large amount of material. Under this system a temporary line of rails is laid, and the material as it is excavated is laid along each side, so that the feeding can proceed from both sides, and the broken stone deposited in a line along the centre of the road ready for spreading. The whole machine has been designed, however, with a view to the general requirements of a contractor, and can be used as a locomotive, as it will pull a good load after it and move it from place to place. It will drive a stone breaker, saw bench, mortar mill, hoisting gear, or other machinery requiring a portable engine. The Savile-street Foundry Company have received several flattering testimonials from those who have used the machine:—Messrs. Kirk and Evans, of Bradford, state that it has given them great satisfaction for breaking up stones for concrete; Messrs. Leikert Brothers, of Oberlahnstein, have successfully used it for road metal; and Capt. Thos. Thompson, of Ystradeinion Mines, has been breaking with it "from 50 to 60 tons per day of the hardest stone that can be found in Wales." The machine promises, when better known, to come largely into use.

MECHANICAL STOKER.

Enquiries have recently been made with regard to the mode of effecting the mechanical stoking of steam-boilers; it will, therefore, not be out of place to give a brief description of a very ingenious contrivance now exhibited in the British Section of the Paris Exhibition (Group VI., class 54) by Mr. Joseph Bernays. The apparatus in question is the invention of Mr. H. C. CARVER, of the Railway Works, Llanidloes, North Wales, and consists mainly of a fuel hopper, of an apparatus for breaking up lump coal and for gradually delivering the fuel (whether consisting of lump or small coal) out of the hopper, subject to the control of a feed regulating valve, and of a fan which scatters the fuel thus delivered all over the grate area. Each machine is entirely independent, and feeds one fire. An ordinary belt gives motion to the whole apparatus. The coal-breaking apparatus is made chiefly of hardened steel. The lumps of coal put into the hopper may be of such size that about ten of them will fill an ordinary galvanised bucket. By means of the feed regulating valve the supply of fuel to the fire (whether the hopper be filled with lump coal, slack, or duff) can be adjusted to any desired rate between the maximum and zero. This feature is an important one in cases in which the demand for steam is intermittent, as during the periods of inactivity, suitable adjustments of the feed valve and chimney damper enable the fire to to be kept in a condition of readiness for the alternating periods of activity, without incurring an excessive production of steam meanwhile. The fan is mounted upon the fire door on a horizontal axis, and driven by a flexible shaft which allows the fire door to be freely opened and closed. The fire front used with the machine may be of the modern plate-iron type, and the machines can frequently be adapted to existing fire fronts of this and other types.

The precise method of attaching the apparatus will, of course, depend to some extent upon the form of the furnace; but by way of example it may be stated that in attaching the machines to modern Lancashire boilers with plate-iron fire fronts, and in various other cases, it is not necessary to make any holes in the boilers. A machine may be readily transferred from one boiler to another by an intelligent fireman, and it is, therefore, unnecessary to keep machines standing idle upon spare boilers. Amongst the advantages claimed for the apparatus are that none of the boiler rivets are concealed from view by the machine; that in case of need hand firing can be resorted to without impediment; and that the strength of the various parts of the machine is so proportioned that if the coal-breaking apparatus becomes arrested by pieces of metal or of other hard substances accidentally mixed with the fuel, the driving belt slips on its pulleys, and no breakage of the machine ensues. Much care has been taken to make the machine easy to keep clean and in good order, and difficult to derange; and it has been found in practise that the use of the machine prevents nearly all smoke, and as compared with hand firing, effects a large saving in fuel, and increases the rate of steam generation, or in other words, diminishes the amount of boiler power required. The invention is likely to come largely into use, and that those interested may be able to comprehend more fully its exact character an early opportunity will be taken to publish an illustrated description.

THE COAL TRADE.

Mr. J. R. Scott, the Registrar of the London Coal Market, has published the following statistics of imports and exports of coals into the port and district of London by sea, railway, and canal during May 1878:—

By sea.	Ships.	Tons.	By Railway and Canal.	Tons. c.
Newcastle	129	103,148	London & North-Western	98,846 1
Seaham	55	25,227	Great Northern	58,559 0
Sunderland	100	66,036	Great Western	85,220 0
Middlesborough	7	1,813	Midland	128,902 0
Hartlepool	56	29,299	Great Eastern	60,744 10
Scotch	3	357	South-Western	3,166 11
Welsh	6	1,266	Lond., Chatham, & Dover	1,453 0
Yorkshire	17	818	South-Eastern	1,291 19
Small coal	4	1,282	Grand Junction Canal	379 0
Cinders	2	258		
Total	379	220,504	Total	428,017 0
Imports—May, 1877	439	241,273	Imports during May, 1877	502,202 15

Comparative Statement, 1877 *and* 1878.

By Sea.	Ships.	Tons.	By Railway and Canal.	Tons. c.
Jan. 1 to May 31, 1877	2304	1,345,433	Jan. 1 to May 31, 1878	2,316,669 0
Jan. 1 to May 31, 1878	2131	1,317,390	Jan. 1 to May 31, 1877	2,170,525 0
Decrease—1878	171	28,043	Increase—1878	146,075 0

EXPORTS.

Railway-borne coal passing *in transitu* through district	Tons	67,701
Sea-borne coal exported to British possessions, or to foreign parts, or to the coast	Tons	37,902
Ditto, sent beyond limits by railway		9,564
Ditto, by canal and inland navigation		1,580= 49,046
Railway-borne coal exported to British possessions, or to foreign parts, or the coast		31,080
Ditto, by rail beyond district		47
Ditto, by canal and inland navigation		283= 31,410
Sea-borne coal brought into port and exported in same ships		1,372
Total quantity of coal conveyed beyond limits of coal duty district during May, 1878		149,749
Ditto, May, 1877		163,181

Comparative Statement, 1877 *and* 1878.

Total distribution of coal from Jan. 1 to May 31, 1878	895,374
Ditto, Jan. 1 to May 31, 1877	779,767
Increase in the present year	115,607

General Statement.

Increase in coals imported by railway and canal, present year	146,075
Less decrease by sea	28,043= 118,032
Deduct increase in coals exported	115,607
Total increase in trade within London district during present year	2,425

THE COPPER TRADE.

Stocks in Europe:—	Tons.
Chili ores and regulus, Liverpool & Swansea (equal to fine)	4,116
Chili bars in Liverpool	14,039
Ditto Swansea	2,147
Chili ingots in Liverpool	—
Ditto Swansea	—
Foreign copper (chiefly Australian) in London	5,928
Ditto ditto landing	449
English copper in London	50
Chili bars and ingots and Barilla in Havre	9,995
Other copper in Havre	475 = 37,199
Afloat and chartered from Chili to Europe (advised by mail):—	
Ores and regulus (equal to fine)	1,513
Bars and ingots	3,771 = 5,284
Afloat from Australia (advised by mail):—	
Fine copper	850
Afloat and chartered from Chili to Europe (advised by cable):—	
Fine copper	3,100
Total	Tons 46,433

Leadenhall-street, June 1. —— HENRY R. MERTON AND CO.

Business in this metal for the first ten days of May was very restricted, and Chili bars were sold as low as 70*l.* 10*s.*; this price attracted the attention of investors to copper, and in consequence an upward movement took place, being contemporary with the brighter prospects of peace the rise was very rapid, and some hundreds of tons changed hands at prices up to 64*l.* 10*s.* for g.o.b., and 65*l.* 10*s.* for best brands. Australian shared in the improvement in value to but a limited extent, being little enquired for, and holders not pressing sales. Manufactured copper followed the rise but slowly, the full increase being hardly yet established. The Indian demand small, the native buyers in Bombay having agreed together in April to stop all purchases for about two months, so as to allow the large stocks to be worked off to some extent. The charters for the latter half of May were advised on the 3rd as 2050 tons, consisting of 1650 tons bars and ingots, and 400 tons of furnace stuff, all for the United Kingdom.

The imports of copper into England for the first three months of the following years were—1874, 25,887 tons; 1875, 29,686 tons; 1876, 24,705 tons; 877, 29,774 tons; 1878, 28,280 tons. The exports for the same periods were—1874, 17,417 tons; 1875, 14,910 tons; 1876, 15,764 tons; 1877, 17,204 tons; 1878, 19,8.0 tons. The position from June 1, 1877, to June 1, 1878, was as follows:—

	Price.	Stock on hand.	Stock, including afloat and chartered. Advised by mail only.
1877—June 1	£ 69 0 0	Tons 29,342	Tons 34,844
July 1	69 0 0	29,523	35,578
August 1	69 0 0	29,893	34,513
September 1	67 0 0	31,004	35,437
October 1	66 0 0	31,823	36,239
November 1	65 10 0	31,454	36,177
December 1	63 10 0	30,701	36,881
1878—January 1	66 0 0	31,388	38,713
February 1	66 0 0	31,305	37,769
March 1	65 0 0	33,235	40,535
April 1	63 10 0	34,345	41,490
May 1	62 0 0	36,416	42,725
June 1	64 10 0	37,410	42,809

And the comparative positions at the same date of the past four years with the present:—

	Price.	Stock.	Stock, including afloat and chartered. Advised by mail only.
1874—June 1	£ 75 0 0	Tons 27,522	Tons 34,238
1875—June 1	83 0 0	23,530	29,6?8
1876—June 1	78 0 0	22,642	30,997
1877—June 1	69 0 0	29,342	34,844
1878—June 1	64 10 0	37,410	42,809

The charters to May 31, 1878, were 18,450 tons, against 18,800 tons in 1877.

Leadenhall-street, London, June 6. —— HENRY ROGERS, SONS, AND CO.

During the first fortnight of May this market continued depressed, but has since shown considerable animation. With higher prices in view, importers of Chili bars were reluctant sellers, and an advance of 3*l.* per ton was established during the past month. For English there was also an improved demand. Wallaroo being held out of the market quotations are but nominal. In Burra and other brands a fair amount of business was transacted. Charters from West Coast were advised for first half of May as 1300 tons, for second half of May 2000 tons. We quote Chili bars 64*l.* 10*s.*, Burra 71*l.*, tough 67*l.*, manufactured 74*l.* to 76*l.*, ore and regulus 12*s.* 6*d.* to 13*s.* per unit. The imports and exports from January to April were, by the Board of Trade Returns—

		1878.	1877.	1876.
IMPORTS.				
Ore	Tons	24,140	28,405	21,385
Regulus		11,490	11,492	9,906
Copper		13,833	14,025	11,418
EXPORTS.				
Foreign raw		4,435	5,6?0	5,222
English raw		7,133	3,608	3,606
Manufactured, including yellow metal and brass		9,013	9,290	7,502

London, June 6. —— FRENCH AND SMITH.

COPPER.—Messrs. RICHARDSON and Co. (June 1) write—The stocks of Chili copper produce remaining unsold at Swansea on May 1 were—ore, 2189 tons; regulus, 6911 tons; and copper, 2143 tons. This has been increased by arrivals of ore, 420 tons; regulus, 515 tons; copper, 254 tons; and the private sales have been, ore, 490 tons; regulus, 170 tons; copper, 350 tons. The total unsold at Swansea on June 1 were—ore: Chili, 2189 tons; Cape, 266 tons; Portuguese, 347 tons; New Quebrada, 364 tons; Dutch, 206 tons; British, 170 tons—3443 tons; regulus, 7256 tons; copper, 2147 tons. These totals represent about 6200 tons fine copper. Two sales of Cape ore have taken place during the past month, 600 tons

on the 8th fetched an average of 11s. 9d. for 33 7-10ths per cent., and 50½ tons on the 22nd realised an average of 12s. 0¼d. for 32 per cent. A cargo of Bolivian ore and regulus, just arrived, have been sold at 12s. 4½d. per unit for the regulus and 11s. 10½d for the ore. About 1000 tons Chile regulus to arrive are reported sold at 12s. 9d. per unit. The charters from the West Coast advised since our last are —For the last half of April 1500 tons bars and ingots, and 350 tons in ores and regulus for the first half of May, 850 tons bars and ingots, and 1350 tons in ores and regulus for England, and 100 tons bars for France. Shipments for the first four months of the past four years compare as follows—1875, 15,868 tons; 1876, 16,889 tons; 1877, 17,260 tons; 1878, 16,131 tons. The rumours of a likelihood of the meeting of the Congress upon the Eastern Question have given our market a more cheerful tone; Chile bars of g.o.b.'s have rapidly risen from 61*l.* to 64*l.* 10s., 64*l.* 15s. to 65*l.* is asked for favourite brands, and 65*l.* 5s. to 65*l.* 10s. for picked; and at these prices holders only offer a limited quantity, expecting better rates to follow on the realisation of the hopes, founded upon the present more pacific aspect of politics.

Arrivals here (Liverpool) during the fortnight of West Coast, S.A., produce:—Patagonia, from Valparaiso, 300 tons bars, 150 tons ingots; Etx, from Coquimbo, 755 tons bars. At Swansea—Alpha from Tocopilla, 420 tons ores, 170 tons regulus: Rose of England, from Totoralillo, 345 tons regulus, 254 tons bars. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at—

	Ores.	Regulus.	Bars.	Ingots.	Barilla.
Liverpool	—	917	14 039	—	—
Swansea	2189	7256	2,147	—	—
Total	2189	8173	16,186	—	—

Representing about 20,302 tons fine copper, against 19,603 tons June 15; 15,527 tons May 31, 1877; 10,806 tons May 31, 1876; 12,756 tons May 31, 1875. Stock of Chili copper in Havre, 8660 tons fine, against 8735 tons May 31, 1877; stock of Chili copper afloat and chartered for to date, 8800 tons fine, against 11,000 tons May 31, 1877; stock of foreign copper in London, chiefly Australian, 6553 tons fine, against 4400 tons May 31, 1877. HARRINGTON, HORAN, AND CO.

THE TIN TRADE.

	April 30, 1878.	May 31, 1878.	May 31, 1877.	May 31, 1876.
Straits and Australian, spot...Tons	8,483	9,356	8,311	6,960
Ditto, landing	875	454	1,210	510
Straits afloat	745	131	328	500
Australian, afloat	2,190	2,085	2,558	1,500
Banca, on warrants	1,144	1,499	1,434	1,375
Ditto, Trading Co.'s hands.	627	375	221	1,444
Ditto, afloat	438	650	561	375
Billiton, spot	1,853	1,698	1,143	987
Ditto, afloat	1,3 0	1,230	900	1,000
Australian tin in Holland	426	426	700	—
Total ...Tons	18,031	17,904	17,767	14,651
Deliveries during the month in London	952	1,081	1,099	1,029
Ditto, Holland	703	475	385	324
Total ...Tons	1,605	1,556*	1,484	1,353

* Also 302 tons overside to America.

London, June 1. A. STRAUSS AND CO.

Our tin market opened very flat at the beginning of the month, prices giving way about 1 fl. At one time there was considerable pressure to sell, but buyers showed very little inclination to relieve holders, even at the aforesaid reduction. The statistical position of the article is still far from favourable. Stocks are very heavy, and supplies continue undiminished. The Dutch Trading Company's third sale in 1878 took place on the 28th inst., when, 20,080 slabs Banca were sold from 39¼ to 39½ fl., average 39¾ fl. The next sale will be held towards the end of July. Banca after declining to 38¾ fl. and 38½ fl. advanced to 39 fl., with but little offering. Since the sale there are sellers at 39½ fl. Billiton declined from 37½ fl. to 36¼ fl. with several large sales at the latter figure. The price subsequently advanced to 37 fl., which buyers however, showed themselves most loth to pay. Holders now ask 37⅛ fl., but there is little or nothing doing. On Tuesday the 11th June a public sale, comprising 9000 peculs, will take place at Batavia. According to an official statement the production of Billiton for 1877-78 (from May 1, 1877, until the end of April, 1878) amounts to 61,794 peculs, against 59,532 peculs in 1876-77; 62,000 in 1875 76, and 63,000 peculs in 1874-75.

The position of Banca tin in Holland on May 31, according to the official returns of the Dutch Trading Company, was—

	1878.	1877.	1876.
Import in May ...Slabs	15,884	2,904	8,549
Total five months	43,122	52,983	29,488
Deliveries in May	8,701	6,200	4,700
Total five months	48.695	53,889	32,757
Stock second hand	47,980	45,940	44,018
Unsold stock	12,011	7,025	44,606
Total stock	59,991	52,965	88,624
Afloat ...Peculs	10,400	8,975	6,000
Statement of Billiton:—			
Import in May ...Slabs	5,000	6,478	—
Total five months	53,245	38,845	25,579
Deliveries in May	10,619	6,093	8,179
Total five months	38,034	32,822	36,382
Stock	53,721	36,642	28,876
Afloat ...Peculs	10,600	12,000	15,000
Quotation { Banca	39¼ fl.	42½ fl.	45¼ fl.
May 31 { Billiton	37⅛	41¼	44

These combined returns of Banca and Billiton for 1878, compared with those for 1877, exhibit—An increase of the import for May of 359 tons; a decrease of the import for the five months of 142 tons; an increase of the deliveries for May of 219 tons; an increase of the deliveries for the five months of — tons; an increase of the stock second hand of 597 tons; an increase of the unsold stock of 156 tons; an increase of the total stock of 753 tons; a decline of the quotation of Banca of 5*l.* per ton. The Government Returns for the month of March are—

EXPORT OF TIN FROM HOLLAND.

	March.			Three months.		
	1878.	1877.	1876.	1878.	1877.	1876.
Germany ...Tons	249	223	247	680	766	752
England	7	55	—	23	106	8
Belgium	114	138	85	354	459	337
France	40	52	12	74	189	61
Hamburg	56	36	27	178	117	110
United States	—	19	—	—	55	15
Other countries	32	16	5	46	27	11
Total	498	539	376	1355	1699	1295

Rotterdam, May 31. EBELING AND HAVELAAR.

The tendency of values was to harden, but the market was devoid of activity. The deliveries continue large, being now 1052 tons in excess of last year, and a small shipment from the Straits has decreased the total visible supply. The arrivals during the past month were again large, the total quantity brought into the European markets since the beginning of the year being 9937 tons, or 731 tons in excess of last year. Below we give our usual statistics:—

	1878. May 1.	1878. June 1.	1877. June 1.	1876. June 1.
Foreign in London ...Tons	9,392	9,815	9,501	7,470
Banca in Holland	1,144	1,499	1,435	460
Billiton in Holland	1,854	1,630	1,148	902
Afloat for Europe, Straits, advised by mail and wire	720	170	300	500
Afloat, Australian ditto	2,000	1,800	2,300	1,500
Afloat, Billiton	750	625	750	950
Banca in Dutch Trading Co.'s hands	306	375	220	2,310
Banca afloat, by sailing vessels	438	650	560	375
Total	16,704	16,614	16,111	14,467

June 6. FRENCH AND SMITH.

THE WEEK.

SATURDAY, JUNE 1.—The North-Eastern Railway stock rose 2, to 142. Four days ago the quotation was below 137., and previous to that confident opinions were expressed that the price would soon be below 130; but the stock is very firmly held, and those who, during the last day or two have been anxious to close their "bear" accounts have found that the necessary buying has put the price up 5 per cent. Dover A has now reached 128¾, and Brighton A 139¾; these prices must surely, one would think, tempt holders to sell. Chatham Preference has reached 90¾, the ordinary being 25¼. The highest price touched by the latter at any time last year was 24. The Port Phillip profit for the month ending May 22 was 64*l.* Leadhills, 3⅝ to 3¾; Scottish Australian, 1⅝ to 1¾; Colorado, 3 to 3¼; Fortuna, 5¼ to 5½.

MONDAY.—The meeting of the European Congress being definitely settled, and the day fixed, large purchases of stocks were again made. Chatham ordinary reached 27¼, Brighton, A, rose 2¾ (141½), and Dover, A, 1½ (130). Egyptian bonds had a marked rise, the Preference closing 3½ higher (70), and the Unified 2⅜ higher (44¼). Great Eastern advanced to 51, and North-Eastern to 142¾. In mining shares the chief feature was the buoyancy of Richmonds. From being 9½ there was a rapid rise to 10½, and ultimately the shares left off 11 to 11¼. Cape Copper closed 10s. better, 33½ to 34; Javali, 6s. to 8s.; Don Pedro, 12s. to 14s.; Port Phillip, 10s. to 12s. 6d.; Hultafall, 4 to 4¼.

TUESDAY.—A further rise took place in Richmond, which closed 11¼ to 12, and in Cape Copper; the shares of the latter can now be sold at 34, as against the 31 current a few days ago. A few enquiries were made for shares in other copper mines, such as Devon Great Consols, Gawton, Marke Valley, Penstruthal, and East Caradon. The railway and foreign markets were irregular. Egyptian Unified rose 2¼ (48½), and the preference 1 (71), both at one period of the day being much higher, while Russian 1873 fell 1¾ (81½ ex div.) In railways there was a fall of 1¾ in Berwick, and one of 1¼ in British, while Dover, A, closed 1½ higher (131).

WEDNESDAY.—Cape Copper improved to 34½, but Richmond were offered, and declined to 11¼. Javali, 6s. to 8s. Eberhardt, 7¼ to 7¾. Don Pedro, 12s. 6d. to 15s. East Van, 4¼ to 4½, Van, 22 to 22½. Great Laxey, 19 to 19½. Tankerville, 3¾ to 4. Marke Valley, 10s. to 15s. In the telegraph department prices closed as follows:—Anglo, 62½ to 63. Brazilian, 6¼ to 7. Cuba, 9⅜ to 9⅝. Direct, 133½ to 137½. Eastern, 7⅛ to 7¼. Extension, 7⅝ to 7⅞. Globe, 5⅛ to 5⅜. Great Northern, 8⅜ to 8⅝. Construction, 31¼ to 31¾. The other markets were inactive, and showed little change, except that Egyptian Unified fell 1¾, to 47¼.

THURSDAY.—Hudson Bay shares can now be had at 10. Notice has already been given to shareholders that no dividend can be paid to them for this year. All descriptions of furs can now be imitated so cleverly that few care to give the price necessary for purchasing the real article, and so the business of this company—the oldest quoted on the Stock Exchange—languishes. There has not been a dividend paid since 1876, when 4½ per cent. was given. At one time during that year shares fetched 22*l.* They are 17 each, fully-paid, and considering the vast territory owned, should almost be worth buying. The company was incorporated in 1670.

FRIDAY (*Opening*).—The markets show a weak tendency, with very little doing. Egyptian Preference has receded to 71, the Unified being 48⅝. Caledonian and Chatham Preference each show a fall of ¼ from last night. In mines, West Chiverton retain their recent recovery, while East Vans are dull, and offered at 4¼. Javali, 7s. to 9s.; Aberdaunant, 6s. to 8s.; Bodidris, ⅞ to 1⅛; D'Eresby Consols, 10 to 12; Leadhills, 3⅝ to 3¾; Cape Copper, 34 to 35; Don Pedro, 12s. to 14s.; Port Phillip, 11s. to 12s.;; Chicago, 10s. to 15s.——*Two o'Clock.*——With the exception of Turkish bonds, which are higher—the Fives being up to 14¼—the markets continue dull. Consols have receded to 96, sellers. The St. John del Rey dividend will be at the rate of 17½ per cent. Llanrwst, 2 to 2¼; South Frances, 2⅞ to 3⅛; Wheal Peevor, 6¼ to 6½; Marke Valley, 10s. to 15s.; Wheal Owles, 25 to 30; Great Laxey, 18¾ to 19¼.——*Four o'Clock.*——The Richmond report states that after paying all expenses, and the dividends announced, there remains a bulance of 57,222*l.* The profits for March and April are estimated to give 63,000*l.* additional, or more than sufficient to pay 1*l.* per share in dividends. Shares at one time to day verged on 12, but are now 11½ to 11¾. Chapel House, 3 to 3¼; an issue of preference shares, it is understood, is contemplated here. Pandora, ⅝ to ¾; Van, 22½ to 23. FERDINAND R. KIRK.

WATSON BROTHERS' MINING CIRCULAR.

Ten years ago the weekly information which had previously been published for a great number of years in WATSON BROTHERS' Mining Circular was transferred to the columns of the *Mining Journal*, with the following announcement; which is now reproduced in consequence of the numerous letters and enquiries handed to them of late in reply to one which appeared in the Journal on the Clementina Mine.

WATSON BROTHERS,
MINE OWNERS, STOCK AND SHARE DEALERS, &c.
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash or for the usual fornightly settlement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charges for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in upon the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2s.

In the year 1843, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to *recommend* mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

KHEDIVE.—We do not like advising in reference to foreign bonds, which have caused more ruin and misery within the last few years than any other species of investment, and the losses upon them have far exceeded all the losses of all the mines we ever heard of during the past 50 years. Some people went into those bonds with faith, and invested their *all* in them, because of the increased incomes they gave them, and they have thus in many instances lost all. Losses in mines are occasionally bad enough, but everyone knows a mine to be a speculation, and only invests spare money; accordingly, no one should speculate in mines with money that would cripple them to lose, or without dividing his risk in four or five mines, so as to secure success in the aggregate.

The late rise in Egyptian, upon which one correspondent writes us, and which has caused the above remarks, also illustrates the old saying of "When things are high the public buy, but when they're low they let them go." Only a few weeks ago, in fact, almost every paper was writing against Egyptian stocks—there was a panic in them, and, lest they should lose all, timid people rushed into the market, and sold out at a loss of 50 per cent. and more! Now, it would appear, there is once more "corn in Egypt," and the poor deluded victims who rushed into the jaws of the "bears" see their departed stock rush up 20 and 30 per cent., and *perhaps* another set of victims rush in!

We prefer mines, because we think we understand something about them, and can always go and look at them for ourselves, and get the best opinions respecting them. We know also, at this present moment, that metals are on the rise, and must advance with the prospects of peace. We shall soon see, therefore, the silver lining of the cloud of depression which has so long hung over mines; and we would rather advise the Khedive, as well as others, to take the chance of a few good mines, that may rise 50 per cent. in a few months time, to either Egyptians or Turks.

MORFA DU.—Having taken such interest in raising the capital for this mine, we point with pleasure to the report of this week. The bluestone is being reached, and the shareholders may expect a good rise.

SATURDAY, JUNE 1.—Market very quiet, and prices nominal. Van, 21⅛ to 22¼; D'Eresby Mountain, 80 to 100; Great Laxey, 18½ to 19½; D'Eresby Consols, 10 to 12; East Van, 4⅛ to 5; Roman Gravels, 7⅛ to 8; Leadhill, 3⅛ to 3¾; West Chiverton, 8 to 10; Carn Brea, 40 to 42½; Dolcoath, 30 to 32; South Codurrow, 11 to 11⅛; South Frances, 2¼ to 3¼; Tincroft, 10 to 12; Grenville, 3⅛ to 3¾; Agar, 3¾ to 4¼; Peevor, 6¼ to 6⅛; Richmond, 9 to 9½; Eberhardt, 7⅛ to 7⅞.

MONDAY, JUNE 3.—Market continues inactive. D'Eresby Mountain, 80 to 100; Van, 21 to 23; Rookhope Lead, 17s. to 19s.; D'Eresby Consols, 10 to 12; Tankerville, 3½ to 3¾; Grogwinion, 2¾ to 3¼; East Van, 4⅛ to 5; West Wye Valley, 2¼ to 3; Great Laxey, 18⅛ to 19½; South Frances, 2¼ to 3¼; South Condurrow, 11 to 11⅛; Grenville, 3⅛ to 3¼.

TUESDAY, JUNE 4.—Market for tin and copper shares firmer. Richmond advanced to 11⅛, buyers, and the following are quotations for the day:—Carn Brea, 40 to 42½; Dolcoath, 30 to 32¼; South Condurrow, 11 to 11⅛; South Frances, 2¾ to 3⅛; Tincroft, 10⅛ to 11½; Agar, 3¾ to 4⅛; Grenville, 3⅛ to 3⅛; Peevor, 6¼ to 6¾; Devon Great Consols, 2½ to 2¾; Mellanear, 3½ to 3¾; Parys Mountain, 8s. to 10s.; D'Eresby Mountain, 80 to 100; D'Eresby Consols, 12 to 12; East Van, 4⅛ to 5; Van, 22 to 23; Grogwinion, 2¾ to 3¼; Great Laxey, 18⅛ to 19½; Leadhills, 3⅜ to 3⅝; Roman Gravels, 7½ to 8; Rookhope Lead, 17s to 19s.; Glenroy Lead, 15s. to 17s. 6d.; Tankerville, 3¼ to 3¾; West Chiverton, 8 to 10; Wye Valley, 1½ to 2; West Wye Valley, 2¾ to 3⅛; Richmond, 11½ to 12; Eberhardt, 7 to 7¼; Chontales, 10s. to 12s. 6d.; Don Pedro, 12s. 6d. to 15s.; Javali, 7s. to 9s.; Flagstaff, 17s. 6d. to 22s. 6d.; Frontino, 1½ to 2; New Quebrada, 1½ to 1¾.

WEDNESDAY, June 5.—Market quiet, and prices about the same as yesterday. Richmonds weaker, at 10¾ to 11¼.

THURSDAY, JUNE 6.—Market inactive. Van, 22 to 23; East Van, 4½ to 4¾; D'Eresby Mountain, 80 to 100; D'Eresby Consols, 10 to 12; Roman Gravels, 7¼ to 8; Great Laxey, 18½ to 19½; South Frances, 2¾ to 3¼; South Condurrow, 11 to 11½; Devon Great Consols, 2¾ to 2¾; Richmond, 11¼ to 11½; Eberhardt, 7¼ to 7½.

FRIDAY, JUNE 7.—Market continues very quiet. Van, 22 to 23; West Chiverton, 8½ to 9¼; D'Eresby Mountain, 80 to 100; Great Laxey, 18½ to 19½; East Van, 4¼ to 4¾; D'Eresby Consols, 10 to 12; Tankerville, 3⅛ to 3¾; Leadhills, 3½ to 3¾; South Condurrow, 11 to 11¼; South Frances, 2¾ to 3¼; Tincroft, 11 to 12; Grenville, 3 to 3⅛; Peevor, 6¼ to 6¾; Richmond, 11¼ to 12; Eberhardt, 7½ to 8; Chonitaes, ½ to ⅝.

MINING DRILLS.—At the Dolcoath meeting on Monday some interesting information was given as to the cost of machine drilling. It appears that at present the Dolcoath management is quite satisfied with the results attained by the Barrow drill, and one shareholder stated that in the North, where these machines were also used, they were driving for a little more than two-thirds the cost of manual labour. Col. Beaumort (Diamond drill) had offered to have his boring machine tested at a charge of 34*l.* per fathom, the mine to supply the air, but as the Chairman stated this is a high cost, and above that of manual labour. At Carn Brea, where the Diamond drill is at work, the cost for four weeks amounted to 32*l.* per fathom. It was decided, therefore, to mrke no change, and Col. Beaumont's offer was declined. Even had the terms been modified the Chairman stated that taking into consideration the times and present position of the mine, the time had hardly arrived for a trial to be given. We hear that another well-known drill, which has ately been tried in Ireland, was found to drive five times as fast as hand labour at little more than half the cost, and at another mine 2 fms. in a week were sunk, the usual rate by hand labour being 9 ft. in a month.

RICHMOND CONSOLIDATED MINING COMPANY.

The report of the directors prepared for presentation at the meeting on June 18, states that the present accounts embrace a period of ten months only. During this time the works were shut down four months, so that the time of actual profitable working was reduced to six months, from September, 1877, to February, 1878. Smelting was recommenced with two furnaces on Sept. 5, and the third was started in November; these three furnaces have been running continuously from these dates, smelting collectively more than 1000 tons of ore weekly. The total quantity of ore smelted to Feb. 28 amounted to 25,696 tons, yielding, after payment of all expenses other than the London expenses, a profit of 111,333*l.* 5s. 7d., which but for the present low price of lead would have been much greater. The revenue account shows that after adding 120*l.* 15s. received for transfer fees, and 1089*l.* 8s. 7d. interest received from bullion agent and others, and deducting the London expenses, income tax, and interest on debentures, there remains the sum of 105,310*l.* 4s. 10d. as the net profit for the ten months; adding to this 33,466*l.* 19s. 6d., the amount standing to the credit of revenue April 30, 1877, gives a total of 138,777*l.* 4s. 4d., ont of which the following payments have been made—40,499*l.* 2s. in dividends; 932*l.* 13s. on capital account; and 19,872*l.* 10s. 2d. in respect to the lawsuit with the Eureka Company, and the proceedings of the committee of enquiry, leaving unappropoiated on Feb. 28, 1878, a balance of 77,47*l.* 19s. 2d. Since Feb. 28 the directors have paid a further dividend amounting to 20,250*l.*, thus reducing this balance to 57,222*l.* 19s. 2d. The profits for March and April are estimated at 63,000*l.*, so that up to the end of April there would be to the credit of revenue a sum of upwards of 120,000*l.*

The directors have paid off debentures to the amount of 12,800*l.*, which became due March, 1878, thus reducing the amount to 25,000*l.*, which will become due and payable in March, 1879. The directors congratulate the shareholders on this highly satisfactory result, which is due to the excellence of the ore smelted, and the improvements in the working of the furnaces; when it is remembered that formerly these same furnaces had to be shut down every two or three months for repairs and relining, and that they have now been running uninterruptedly for nearly nine months, and are still in good working order, it is evident that considerable improvement has been effected in this department.

The developments in the mine continue to be most satisfactory, large bodies of ore have been opened up chiefly between the 200 and 400 ft. levels, and although upwards of 37,000 tons have been taken cut since September, there is at the present time more ore in sight than there was when the furnaces were started. Extensive explorations are being carried on not only in these parts of the mine but also next the quartzite in the lower levels. As will be seen by the accounts, 13,746*l.* 10s. 3d. has been expended in wages alone on dead work during the last 10 months. The ore body from which the present supplies are being drawn is dipping downwards in a north-westerly direction, away from the compromise line, and towards the tip top ground, and so far as can be judged from present indications there is every reason to believe it will so continue. Mr. Rickard's weekly reports will have kept the shareholders fully informed as to the extent and nature of these explorations.

The directors have this year made some slight alterations in the form of the accounts, and have given "Abstracts," which contain details of all the principal items. The discrepancy between the value of the bullion as telegraphed weekly and the actual returns is explained by the fact that all bullion is assayed at the works, and estimated on what is known throughout Nevada as the "Eureka Standard Assay." In consequence of the great fall which has taken place in the price of both silver and lead this assumed standard is now too high. Previous to the fall in price the company could obtain for the proceeds of their bullion (after paying marketing expenses) 80 per cent. of the "Eureka Assay Value;" now, however, they can only obtain from 65 to 70 per cent., and it will thus be seen that at present rates the standard is from 10 to 15 per cent. too high.

The directors have to inform the shareholders that their late mining captain, Mr. Potts, and some others, whilst in the service of the company, ignoring the obligations they owed their employers, located some surface claims to the south west of the company's St. David's ground, in the direction in which they supposed the ore body to be making; the managing director called upon them to convey these claims to the company, and for non-compliance with his request dismissed them from the company's service. It will be the duty of the directors to watch the interests of the shareholders in respect of these locations.

It appears that Mr. Pulbrook accidentally disqualified as a director by ceasing to be a shareholder in January, through inadvertently selling his shares, which the purchaser returned to him, and requested the directors to cancel the registration of the transfer, which had been duly made. The directors had, however, declared his directorship vacated, in accordance with the company's Articles. Mr. Pulbrook has since obtained an order in chambers to replace his name in respect of the shares which he sold, but this the directors are powerless to do, though if Mr. Pulbrook has again purchased 100 shares (even if they were the same which he previously sold) he can by regular registration of transfer regain a shareholder's rights, though not those of a director, unless he is again elected to that office by a general meeting.

The report of the committee of investigation having at length been issued, the directors trust it will receive the careful and impartial consideration of the shareholders; it is, however, so voluminous, and of so extensive and exhaustive a character, that the directors, with a view to a calm and clear elucidation of the proposals therein made, abstain from dealing with the subjects contained in the report of the committee until the shareholders meet, when the board will be fully prepared to give explanations, where necessary, and to vindicate themselves from what to them appears unmerited censure of their past efforts to direct the affairs of the company.

BALL TAPS.—The chief object of the invention of Mr. W. ANDERSON, of Erith, is to produce a cheap and efficient tap applicable for the supply of water on the constant supply principle. He employs the slide valve in place of the conical plug, so arranging it with respect to the supply and discharge that there will always be a pressure of water upon the valve, tending to hold it down upon its seat. The valve will cover the opening of the dicharge pipe, and it will be cast with a recess on its under side to receive the upper end of a rod lever which is supported on a pivot pin secured to the discharge pipe. The lower end of this rock lever is fitted to receive the rod of the ball or float, the rising and falling of which in the cistern will open or close the valve. The valve seat is cast in one with the discharge pipe or nozzle, which is flanged to provide for the fitting of the valve box thereto by bolts and nuts. This valve box is cast with a socket on its end to receive the screwed end of the supply pipe. So long, therefore, as the valve is closed a pressure of water will be upon the valve, which will ensure the close fitting of the valve to its seat. There will, however, be no tendency for the valve to stick, but the valve will answer readily to the rise and fall of the float in the cistern. In applying the invention to bib taps, he may work the valve by a finger projecting from an horizontal spindle, mounted transversely of the tap and below the valve seat. The outer end of this spindle may be fitted with a hand lever for giving a rocking motion to the finger, and thus opening or closing the valve. The valve may be made self-closing, by fitting this hand lever as a pendent weight. In this case the maintaining of a discharge will necessitate the keeping of the handle in a raised position. The means for working the slide valve may be varied to suit varying circumstances, but in all cases it will be desirable to avoid the use of packing for the spindle used to transmit motion to the valve by mounting the spindle below the valve seat.

MANUFACTURE OF IRON AND STEEL.—The invention of Mr. W. H. CARMONT, of the Cyclops Iron Company, Openshaw, consists in piling steel scrap and combining therewith steel or iron turnings, the pile is then put into a furnace and heated in the same manner as a common wrought scrap iron pile. During the heating of the pile of steel scrap a portion of the steel or iron turnings becomes oxidised and runs through the mass, thereby causing a flux that welds the steel scrap together, the action of this flux partially decarbonises the steel scrap. The bloom or slab thus produced can be rolled or forged to any shape, or any number of slabs thus produced can be piled together to form heavy forgings which possess the strength and polish of steel with the ductibility of iron. By varying the proportion of the steel or iron turnings to the steel scrap he produces either iron or steel of a mild quality.

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
May 31	Minera	63	£10 6 6	Sheldon, Bush, and Co.
	— ditto	77	10 4 6	ditto
	— ditto	32	10 7 6	Panther Lead Company.
	— ditto	16	10 6 6	ditto
	— ditto	9	10 10 0	ditto
June 6	White Cliff	10	10 2 6	Adam Eyton.

HORNACHOS (Silver-Lead).—This company sold on May 14, 19 tons 8 cwts. 2 qrs., realising 552*l.* 4s.; and on June 5, 58 tons 14 cwts. 3 qrs., for 1658*l.* 9s. 7d. Messrs. Nevill, Druce, and Co. were the purchasers.

BLENDE.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
May 31	Minera	77	£ 4 3 6	Bagillt Smelting Co.
	— ditto	27	3 17 0	Kenrick and Son.
	— ditto	30	3 10 6	Villiers Spelter Co.
	— ditto	28	4 3 6	Bagillt Smelting Co.
	— ditto	25	3 16 0	Villiers Spelter Co.

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—S. Toy, June 5: We have not blasted down any of the lode in the 15 east during the past week, consequently there is nothing new; we have been getting forth in the killas, and shall take down all the lode close to the forebreast the latter part of this week.

BAMPFYLDE.—J. Juleff, June 5: In the 112 there is a very kindly looking lode, and worth about 10l. per fathom. Over this end in the upper level there has been most excellent copper ground driven through, consequently there is no doubt but that this end going west will open productive ground, and as well the quality of the copper improving in the bottom level. In the 102 end west of No. 4 shaft the lode at present is poor, but I believe when the driving is resumed it will soon prove productive, that is judging from the appearance of the lode in the 90 end over this level. The 90 end west is a very promising looking lode, and worth about 7l. per fathom, and from the composition of the lode there is every chance of a further increase in value. The stopes in the back are yielding copper ore of high produce. The No. 1 stope is worth 8l. per fathom. No. 2 stope 7l. per fathom. No. 3 stope 10l. per fathom. The back of the level from the No. 3 stope to the present end is worth on an average 10l. per fathom. The adit end west on the manganese lode, when extended into the hill west, I believe, will produce large quantities of this class of mineral. There is a very long distance on the line of this lode in this property, and what makes it of great importance it will give nearly 40 fms. of backs from the adit level to the surface, which can be wrought without the aid of machinery. In looking at the copper mine with the manganese and iron lodes I consider you have a very valuable property.

BETTWS-Y-COED.—H. T. Haley, June 3: Engine-Shaft: The lode is again increasing in size and value, producing about 20 cwts. of lead per fathom.—North Branch: The 20 is without change, yielding 25 cwts. of ore per fathom.—Deep Adit End: The lode in this end is increasing in size, and looking very promising at present. The shallow adit end is again making good branches of lead, and as we get away from the hard bar of ground will, I have no doubt, still further improve. All other work progressing satisfactorily.

BLAEN CAELAN UNITED.—J. Pell, June 5: The engine-shaft is down 35 ft. below the 20 (in last week's report by an error the engine shaft is stated to be sunk 29 ft. 6 in. below the 30). The driving of the cross-cut north through the lode at the bottom of the winze in the 30 has been suspended for the present. It is a very fine lode, but will not pay for stoping. The 30 west is advanced 1 fm., and set for the month at 6l. 10s. per fathom; value for lead 25l. It is intermixed with copper, and is a splendid lode. Next week I propose to commence driving east on same course of lead and copper. The copper stope referred to in previous report contains good lumps of lead, and I have put two men to rise in the back of the stope to a level above the deep adit, from which 20 years ago a parcel of copper ore was sold at 20l. 12s. per ton. I hope to commence crushing in another fortnight. Everything is progressing satisfactorily.

BLUE HILLS.—S. Bennetts, P. Bennetts, June 1: The main lode in the 80 east is 2 ft. wide, and worth 5l. per fathom. The top lode in the east end at the same level is worth 7l. to 8l. per fathom, and in the west end is improved and worth at present 7l. per fathom. On the north lode the 30 east end is again showing signs of improvement, but as yet not of much value.

BODIDRIS.—H. Hotchkiss, June 5: I have no material alteration to report this week. The different drivages, and the sinking of the easternmost shaft, are progressing satisfactorily. The stopes throughout the mine are yielding lead and blende as reported last week.

CENTRAL VAN.—J. Rock, June 6: The engine-shaft is now sunk 4½ fms. under the 15; ground stiff for sinking, and water rising copiously from the bottom of the shaft. No change of importance to refer to this week. Machinery and lifts all in good order, and working well.

CLEMENTINA.—W. Bennetts, June 5: I am glad to advise you that the mine is now in fork to bottom. We are now engaged in clearing the accumulated lead stuff broken from the stopes at the time the water was in the bottom of the mine, which we hope to get cleared this week, after which we shall at once resume the driving of the bottom levels.

COURT GRANGE.—James G. Green, June 6: Sinking has been going on without interruption during the past week. The shaft is now 10 fms. 5 ft. below the 65, and I purpose sinking 2 fms 4 ft. more, which will allow 9 ft. for loom and tip-lodge, and then cross-cut for a 77 fm. level. In the 45 east, driving by four men, the lode has very much improved in character, composed of fine crystallised quartz, with spots of lead and blende—a very promising end. There is no change to notice in the 20 east; the end continues in a wide strong lode, containing a mixture of blende, with occasional spots of lead; driving by four men. The 14 east, driving by two men, continues in a rich lode, with every appearance of a continuance; the length of ore ground driven through in this level is 26 fms. I shall increase the number of men in this end next month. The winze about 12 fms. behind the end, sinking by six men, is going down in a rich wide lode; when this is communicated with the 30 we can commence stoping in this section of the mine, and to expedite the work, I purpose putting up a rise from the 30 to meet the winze. The 14, on north branch, west of engine-shaft, by four men, is worth 15 cwts. of lead per fm. I think this is on the same branch as the winze sunk below the shallow adit. The intermediate level above the 14, east of open-cast, continues as last reported. The men are breaking satisfactory quantities of good quality orestuff in the various stopes. At surface we are roofing the dressing-machine house, and have a good proportion of the machinery erected. We are also progressing with the slime pits. In conclusion, I have pleasure in stating that there is every reason to be satisfied with the progress made with the works and the prospects opened up since the commencement of operations.

CWMYSTWITH.—June 5: We are pleased to say that during the last fortnight good progress has been made in driving Gill's upper level east in a masterly lode, worth 12 cwts. of lead ore per fathom; the bottom part of the level has been most productive for several fathoms, and it is now evident that the ore ground is lengthening as it dips west. The lode in the winze sinking below Michell's level, east of cross-cut on new lode, is 18 in. wide, and worth 14 cwts. of lead ore per fathom. In Michell's cross-cut, driving north by rock drill, we have met with a few small branches composed of carbonate of lime dipping north, but of no value. The stope over Gill's upper level on the new lode is worth 18 cwts. of lead ore per fathom. In the stope over Michell's west, on the new lode, the lode is 2 ft. wide, and worth 15 cwts. of lead ore per fathom. The stope in the bottom of the intermediate level, on the new lode, is worth 12 cwts. of lead ore per fathom. The two stopes over and under Level Fawr, on the copper lode, are worth 12 cwts. of lead ore per fathom respectively. The pitches throughout the mine are yielding their usual quantities of ore, and we are now busily engaged in dressing it. We still have a good supply of water, and both of our ponds are full. We are making fair progress with the erection of our new self acting jigg, and every effort shall be made to get it to work as soon as possible.

DE BROKE.—J. Phillips, June 6: The lode at Wilson's shaft, sinking below the 45, is producing good stones of lead ore, with quartz in cavities, and altogether of a good character for mineral. The 45 east is looking promising; the lode is composed of killas, quartz, calcspar, and sulphur, and getting more open and wet. In the 35 the lode is very large, but with nothing new to report. A stope in back of the 25 has improved to 2 tons of lead ore per fathom. The other stopes in this level are producing 16 cwts. per fathom, and the stopes above the 35 from 16 to 20 cwts. per fathom. Dressing work is going on steadily, and I intend to sample 20 tons of lead on Monday or Tuesday.

D'ERESBY CONSOLS.—Wm. Bennetts, June 5: There is nothing new in the mine calling for any remark since our last report. The men are engaged in putting down the tramroad.

D'ERESBY MOUNTAIN.—W. Bennetts, June 5: The lode in No. 1 adit level is still looking well for lead and blende ore. The lode in No. 3 is of much the same character as last week's report, showing a very kindly appearance. The stope on the large Gorse lode is still looking well for lead and blende ores.—No. 5 Adit: We are glad to say the men have made good progress in clearing this week; we calculate that we are now within 10 fathoms to No. 3 shaft, where we met with the Steel ore, and this afternoon we have resumed clearing up. The contractor is getting on well with the buildings, and hopes to complete his contract this week.

EAST CHIVERTON.—Richard Southey, June 6: Since the last general meeting of the shareholders we have been pushing forward the different points of operations with all possible dispatch. In the 74 end, west of engine-shaft, the lode is between 3 and 4 ft. wide, presenting a far better appearance than I have seen it before since we passed through the shoot of lead alluded to in my former reports, and I am more than ever of the opinion that larger deposits of lead will be met with in our western ground. End driving by six men, at 4l. per fathom. In the 64 cross-cut south of shaft, the ground is still hard and spare for driving, but the end is letting out a good deal more water than hereto, which I have no doubt is issuing from the lode ahead of us. The end is driving by a full staff, at 12l. per fathom. A great deal of work has been done by way of retimbering the levels and repairing shaft. The boiler has also undergone a thorough cleansing.

EAST CRAVEN MOOR.—David Williams, June 4: In the 42 west we have made a narrow communication with the new shaft from surface, to enable us to tram and draw the stuff from the level through the shaft; it will take another fortnight to square all up to the shaft. During the month we have driven 4 fms. The vein throughout the drivage has been productive, varying in size from 5 to 7 ft. wide, and carrying solid branches of lead ore. After cutting plats I strongly advise to sink this shaft as quick as possible—say, 10 or 12 fms. deeper, to command the ore ground going down in the soles (bottom) of the above level, and also at the same time drive a cross-cut south to intersect the parallel veins. In the 56 the ground has become much easier to work; the vein is at present poor, having a quantity of orestuff broken underground. I advise laying a tramroad on surface to the old floors opposite the office, and build two new slides for grating, and rearrange and improve the floors for dressing, so that I may be able to prepare a parcel of lead ore for smelting.

EAST DARREN.—June 5: In the cross cut south at the 80 the ground is favourable for driving, and small branches of lead occasionally met with. In the 80, west of cross cut, on south branch east, the lode is disordered and unproductive, and at present suspended, the men being engaged in sinking a winze under this level in a lode worth 15 cwts. of lead ore per fathom. In the winze sinking under the 80, on the north lode, the lode is large, yielding saving work for dressing. The stopes and tribute pitches continue to yield fair quantities of lead ore. The machinery throughout is in good condition, and drawing and dressing steadily carried forward.

EAST VAN.—Wm. Williams, June 1: Tempest shaft is down 8 fms. 5 ft. below the 55. The 55 west is extended 10 fms.; we have to-day commenced crossing at the present end to prove the width and value of the lode; so far as seen, the lode is intermixed throughout with spots of lead.

ELGAR.—James G. Green, June 6: I have to report exceedingly good progress in sinking the shaft. No alteration in the 10 east to notice. There is plenty of water for all our purposes, and operations are being carried on without interruption. Next Saturday is our measuring day, when a full descriptive report will be forwarded.

GAWTON COPPER.—George Rowe, George Rowe, jun., June 1: There is no particular change to notice in any point of operation since the report given at the general meeting. Our sampling yesterday is computed at 150 tons of copper ore

GLENROY.—R. Rowe, June 4: I have just returned from the mine. The lode in the shaft is now from 4 to 5 ft. wide, without any change in character; the shaft is down 4½ fathoms below the 80. We have just now a good supply of surface water, and the dam is full to-day.

GOGINAN.—June 5: In the pitch over the 130, east and west of western shaft, the lode is 8 ft. wide, and will yield 12 to 14 cwts. of lead ore per fathom. The pitch below the 120, 45 fms. west of Bryn Pica shaft, has become poor, and is suspended. The lode in the two pitches over the 120, 35 and 65 fms. west of Bryn Pica shaft, is worth 12 cwts. of ore per fathom. In the pitch over the same level, 12 fms. west of western shaft, the lode is 9 ft. wide, and will yield 13 cwts. of ore per fathom. The lode in the three pitches over the 100 varies from 4 to 7 ft. wide, and will produce on an average 11 cwts. of ore per fathom. A pitch has been let over the 60, 15 fms. west of Taylor's shaft, to four men, at 140s. per ton; the lode is worth ½ ton of ore per fathom. A pitch has also been let over the same level, 30 fms. east of Taylor's shaft, to two men at 140s. per ton; lode producing 10 cwts. of ore per fathom. All surface work is being pushed on vigorously, and we intend sampling 30 tons of silver-lead ore on Tuesday next, the 11th inst. Our reservoirs are now well filled with water, and the machinery is in good order.

GREAT LAXEY.—W. H. Rowe, June 5: As you are are aware, the recent breakage has hindered operations at the bottom of the deep mine, and our attention is now very carefully directed to the best means of preventing a recurrence of any similar accident. There is now a much stronger pin at the point of the bob over the shaft, the rods, &c., repaired, and the wheel at work again; but the water will not be in fork for some days yet, and consequently there is nothing fresh to report of the 235 south, or the Welsh shaft sump. In the 235 north the portion of the lode carried is worth 11l. per fathom, and the two stopes in the roof average 24l. per fathom. The stopes in the sole of the 220 are worth 20l. per fm. The lode in the 220 end north is not quite so strong just now, worth 15l. per fm. The stopes in the roof of the 220 average 25l. per fathom. The roof of the 210 and other stopes in the deep mine are worth about 17l. per fathom.—Dumbell's: The 215 end north has further improved since last report, now worth 40l. per fathom. The 200 north continues unproductive; we shall shortly cross-cut to prove if the main part of the lode is on the side. The lode in the 185 end north is at present disturbed by a slide. The 170 end is worth 24l. per fathom. In neither the 155 nor the 140 ends has the lode been properly proved of late, our object for the present being to push these drivings by the drills wtth all possible speed. Although still not of much value for ore, we have not seen the 110 end north looking so promising for a long time as it is at present. The lode is 2 ft. wide, for the most part composed of very congenial spar, well mixed through with blende. Should this lead (as it has every appearance of doing) to another distinct run of ore ground, being now considerably in advance of even the day level), it would be difficult to estimate its importance to the mine. The stopes throughout this section of the mine average in value about 20l. per fathom. Having made the special dialling of the 85 north, referred to in a previous report, it seems almost a certainty that the main part of the lode must be standing to the east, and we have, therefore, commenced to cross cut in that direction.—South Ground, &c.: The rise in the roof of the 165 south continues to be worth 16l. per fathom, the 155 14l. per fathom, and a winze in the sole of the 145 20l. per fathom. In the other workings there is nothing new to notice. Having driven about 8 fms. northwards under the washing-floors, on the course of what there is scarcely a doubt is the lode, we are now proving it a little in the other direction. In our opinion, sufficient will then be done at this particular point; and as it will not be difficult to find, a trial of it should be made still further south in a more convenient and likely position.

GREAT RETALLACK.—J. Harris, June 4: The lode in the stope above the 53 is looking well for blende, worth fully 3 tons per fathom. The pitches throughout the mine are looking much the same for blende as for some time past.

GREAT WHEAL RODD.—Thos. F. Hosking, June 5: There is no very material change in the lode since my report of last week; it continues to turn out some good stones of silver-lead, and is in other respects of a very producing nature. The ground has also continued favourable; we have driven and opened on the lode about the same as in the previous week. We are making good progress generally, and as soon as we have communicated the level with No. 1 shaft, which I consider to be of importance; we shall then be in an excellent position for opening out on this lode more extensively, when I have every confidence good results will very shortly follow.

HARWOOD.—W. Tallentire, May 31: Herdship Level: There has been driven north on No. 2 this month 3 fms. 1 ft., at a cost of 2l. 9s. per fathom; set to the same two men, at 2l. 12s. per fathom. We are now driven north on the vein from the line of the level 11 fms. 3 ft. 6 in. The south end is set to two men for two months, at 2l. 10s. per bing, the ore to be made clean and ready for sale. The vein in this end looks well, and is producing 14 cwts. of lead ore per fathom. We have six or seven bings of lead ore ready for delivery of excellent quality.

HINGSTON DOWN CONSOLS.—T. Richards, June 6: Bailey's Shaft: In the 172 east the lode has a very fine appearance, containing capel, quartz, mundic, and copper ore, and is worth 18l. per fathom. The stope in the back of this level continues to yield 18l. worth of ore per fathom. In the 160, west of Nicholls' winze, the lode is large, and improving; the part carried, 4½ ft. wide, is worth 1 l. for ore per fathom. The sampling on Friday last was 150 tons.

KITT HILL TUNNEL.—H. Bennett, May 6: There is no alteration in any of the bargains since last reported on. The men are making good progress in driving.

LADYWELL.—A. Waters, June 4: The ground north and south of Ellis's winze below the 16 is set to four men, at 3l. per ton of dressed ore. The new shaft is 3½ fms. below the adit in a lode 6 ft. wide, charged with loose lumps of galena and some carbonate of lead—a kindly lode. The rise in the 20, south of said shaft, is up 9½ fms.; lode twitched up at present. We have let the ends and top of rise to four men, at 3l. 10s. per ton of dressed ore. The 20, north of shaft, is opening out tribute ground. We have suspended the 20 south and put the men to cross-cut west to prove the existence or otherwise of a side lode. The tribute pitches worked last month at 5l. per ton are reduced to 4l. 15s. per ton. We shall have 25 tons of lead ore for sale at the usual time.

LEADHILLS.—J. F. Nevin, June 3: High Work Vein: In going through old workings at Gripp's adit we appear to be at the bottom of them, as for the last 5 fathoms we have had whole ground for 5 ft. up one end; we have had very good ribs of ore in the end.—Brown's Vein: Gripp's adit has very much improved in appearance during the last week, and will yield ore shortly. With this level we are approaching the junction of Brown's and Dobie's veins, where fifty years ago a very rich knot of ore was worked to about 4 fathoms below Gripp's adit, or 20 fathoms below Pontshiel adit. Just before stopping the mine the 20 end had been driven southward, and discovered another bunch of ore, which is supposed to be standing whole to the surface. The ore is from 3 to 4 in. wide in the 20 end, and improving every foot. The large slime pit at the lower washing-floors is finished, and doing well. We are drawing up bricks to the foot of the chimney to be ready for the bricklayers, who come next Monday.

LIVINGSTONE CONSOLS.—Wm. Vivian, June 6: In the 40 driving west the lode is of a very promising character; I think there is every chance of a profitable lode, as we advance westward.

LOVELL (THE).—J. Prisk, E. Kempthorne, June 6: Owing to our main tin ground dipping east faster than usual our shaft at present is in poor ground, but the sinking is being inclined eastward as much as practicable, so that when the 50 is reached the ore ground may be met with within so short a drivage as possible. The lode in the end, east of Hownan shaft, has been more capely in the past week, and not producing much tin, but to-day it is giving signs of a speedy improvement, and is still 10 ft. wide.—Eastern Sett: All the works here are being pushed on as much as possible; the engine is in its place, bob fixed, pumpwork put in the shaft, and as soon as the little repairs required to the engine are completed we shall shortly be in a position to work the same and commence sinking; owing to the low price of tin we suspended all stoping throughout the mine.

MARKE VALLEY.—William George, James Stenlake, May 31: We beg to hand you the following setting report: To continue driving the 90 west as per bargain—set last month at 9l. per fathom. At present the ground is a little harder than at the time of setting, but the lode continues regular, and composed of spar, with spots of copper ore and mundic. To stope south part of Rosedown lode below the 80, by six men, at 8l. per fathom; yielding 6 tons of copper ore per fathom. To stope bottom of 60, and strip down the north side, by four men; yielding 5 tons per fathom. To stope back of 60, by four men, at 3l. 10s. per fathom; yielding 3 tons per fathom. We have six men employed in stripping down a side branch in back of this level (worth 3 tons per fathom) preparatory to putting in a stull, which we consider will be required. To stope back of 50, by four men, at 3l. per fathom; yielding 3 tons per fathom. Three stopes in the back of the 40, by four mem in each. No. 1, at 3l. per fathom; yielding 2½ tons per fathom. No. 2, at 2l. 10s. per fathom; yielding 4 tons per fathom. No. 3, at 3l. 10s. per fm.; yielding 3 tons per fathom. To drive the 30 west, by four men, at 10l. 10s. per fathom. We have taken down the lode near the end, and find it about 2½ feet wide, composed of gossan, spar, prian, and spots of copper ore—a very promising lode. No. 1 stope in back of 20, by four men, at 3l.; yielding 3 tons per fm. No. 2 stope in back of the same level, by two men, at 3l. per fathom; yielding 2½ tons of ore per fathom; at this point we are expecting very soon to communicate with the 10 end, which is being driven by four men, as per last month's setting—3l. per fathom, and a tribute of 10s. in 1l. for the ore. We have also set the following pitches. One pitch in the back of the 90, by two men, at 13s. 4d. in 1l. Two pitches in bottom of the 60, by two men each, at 11s. and 13s. 4d. in 1l. Three pitches in back of the 60, by two men each, at 10s., 13s. 4d., and 13s. 4d. in 1l. One pitch in back of the 30, by two men, at 10s. in 1l. One pitch in back of the 10, by four men, at 6s. 8d. in 1l.

MEDLYN MOOR.—Joseph Prisk, Charles Rowe, June 5: New North Lode: We are making good progress in sinking the shaft for the working of this lode, and the masons are engaged in building bob-stand. Next week we shall commence laying down flat rods from the main engine, and get everything in readiness to attach the same as soon as required.—No. 1 North Lode: The 33, west of engine shaft, is improved, and is producing better quality tinstone; and as we are nearing the main cross-course we have every reason to expect a much better lode.—No. 1 South Lode: We are making fair progress in cutting down the flat-rod shaft below the 17, and in a week or ten days the 27 will be reached, when sinking on the lode will be commenced as soon as possible. Everything underground and at surface is going on satisfactorily.

MELLANEAR.—June 5: The lode in the 40, west of the rise, west of the skip-shaft, is 2 ft. wide, and worth ½ ton of copper ore per fathom. The ground in Gundry's shaft is very much harder for sinking, and we are continually meeting with smaller strings of mundic and copper ore, and the water is also increasing a little in the bottom of the shaft. I think from these indications that we shall have the lode very soon. The lode in the 90, west of Gundry's shaft, is producing good stones of ore, but not sufficient to value. The lode in the 80, west of shaft, is worth 3 tons of ore per fathom—a very kindly looking lode. The lode in the 70, west of shaft, is worth 2½ tons of ore per fathom. The lode in the 60, west of shaft, is worth 4 tons of ore per fathom. The winze in the bottom of this level is also worth 4 tons of ore per fathom. The rise in the back of this level is worth 3 tons of ore per fathom. The lode in the 50, west of shaft, is worth 2 tons of ore per fathom. No. 2 rise in the back of this level is worth 5 tons of ore per fathom. The lode in the 40, west of No. 1 rise, is worth 5 tons of ore per fathom, and the ground very easy for driving. The ground in the 30 cross-cut, south of shaft, is a little harder, but our progress in driving is still very good. There is no change to notice in the 100, west of the skip-shaft, except that the ground is a little better for driving.

MONYDD GORDDU.—James G. Green, June 6: Setting Report: The engine-shaft is down 65 ft. below the 24, and, as the water is too quick for our present pumps to enable us to sink by, it has been decided to start a 34 fm. level, and we are now preparing to cross-cut, after which we shall proceed to divide the shaft and put in foot and skip ways. In the 24 west, owing to the loose character of the lode, we have had a big fall of ground, and it will take us some weeks to clear and secure it. The stuff contains splendid lumps of lead embedded in gossan, lime, &c. The 12 cross cut north is extended 32½ fathoms; the indications and character of the ground are as for some time past; re-set to six men, for the month, at 150s. per fathom. The 12 junction stope, to four men, at 65s. per fathom. The 12 west stope, on main lode, to four men, at 65s. per fathom. These stopes are worth together 25l. per fathom for lead. As they are full of stuff, and our space limited, I have reduced the number of hands until we recommence dressing. To explain with regard to the lode in the 24 in language intelligible even to those who do not understand mining phraseology, I may state that when we have opened this part of the mine sufficiently 12 men at the present value of lead, and to earn their ordinary wages, will bring to the bank 20 tons of lead, worth at least 270l., and the cost of their labour in so doing will be about 60l. The smallness of this cost, as compared with the result, being due in great measure to the loose character of the lode, and the consequent facility with which the lead can be broken down. This is the result in one section of the mine, which, irrespective of the anticipated increase in the value of the lead, will be fully doubled as soon as the 34 fm. level has reached and the driving therein has opened the section between the 34 and 24 for stoping, and may again be increased if opened up by a cross cut to the north lode, which would be tantamount to a second mine.

MORFA DU.—T. Mitchell, June 6: The bottom level is now in about 10 fms. from the shaft, and we have at this point cut into a lode, which is yielding some good saving work for bluestone. We have already broken out over a ton of ore. We also find a good mixture of copper ore in a portion of the lode. We shall be able to say more about it in a day or two. We calculate on having about 8 fms. more to drive to get under the large deposit seen in the level above.

NEW BRONFLOYD.—Thomas Kemp, June 6: The following is the setting for the months of June and July:—No. 3 Shaft, North Lode: Ten men to strip the lode to full width in the 121, west of shaft, at 100s. per fathom; lode worth from 20 to 25 cwts. of ore per fathom. The tribute pitch over the 110, east of winze, is re-set to eight men, at 150s. per ton; lode worth 15 cwts. of ore per cubic fathom. The pitch over the 73, east of shaft, is let to six men, at 160s. per ton; lode producing low-quality orestuff.—Middle Lode: Four men to continue the 73 end, west of Curtis's cross cut, at 185s. per fathom, which includes the removal of stuff—stent 4 fathoms, or to the end of two months. The part of the lode carried by this drive is about the same as when last reported, carrying a little ore, but not to value. The stope over the 40, east of shaft, is let on tribute to four men, at 160s. per ton; lode worth 15 cwts. of ore per fathom—the ground is extremely hard for breaking. Two men to cross-cut south in the adit, east of shaft, at 110s. per fathom, which includes the removal of stuff; the part of the lode we are cutting through at this point is principally spar, spotted with ore, and showing a very good appearance. The men in the pitches over the 110, west of winze, and 52, east of No. 2 shaft, I think are getting fair wages in their respective tributes; their take will not terminate until the end of the present month. Hauling and dressing going on with all regularity. Machinery in good working order.

NORTH LAXEY.—John Sowden, June 4: The 84 end is now passing through some disordered ground, which has made the lode poor and small; now 1 foot wide, and yielding a small quantity of lead for the dressing-floors, but not to value. We are daily expecting to get through the disordered country rock, and see an improvement in the lode again. The stope in the roof of the 96 is producing 15 cwts. of lead per fathom. The stopes in the sole of the 60 are producing 10 cwts. per fathom.

PARYS MOUNTAIN.—T. Mitchell, June 6: We have this week intersected another branch in the 90 south, which is about 6 in. wide, consisting of copper ore and sulphur, and to-day a small branch of about 2 inches has made its appearance. The character of the ground continues much the same as when last reported.

PATELEY BRIDGE.—C. Williams, June 6: The 30 east, on Rake vein, has been extended during the month 3 fms., which produced 12 tons of lead ore; the vein in the present forebreast is not for the moment so productive, having been disordered by a cross course, but in my opinion the change is only temporary, and no doubt, when the end is shifted forward a few feet, it will again be found as rich as ever; present value, 1 ton of lead ore per fathom; set for the month to six men, at 120s. per fathom. The 30 west, on same vein, has been driven 1 fm. 5 ft. 6 in.; the vein throughout averages from 5 to 6 ft. wide, consisting of carbonate of lime, crystallised quartz, gossan, and lead ore, worth of the latter 1 ton per fathom; set for the month to four men, at 105s. per fathom. The vein in the stope in the back over the 30 east is 5 ft. wide, and worth 1 ton of lead ore per fathom; set for the month to four men, at 80s. per fathom. The vein in No. 2 stope and rise in the back of ditto, 20 fms. east of engine-shaft, is 5 ft. wide, and worth 1½ ton of lead ore per fathom; set for the month to six men, at 140s. per fathom. The vein in No. 1 winze in the 20 west is 3 ft. wide, and worth 1 ton of lead ore per fathom. The tribute pitch on Fielding's vein in the 20 north-west is worth 1 ton of lead ore per fathom; set to four men, at 5l. 12s. 6d. per ton for dressed ore. The tribute pitch on the string under the 20 east is worth 15 cwts. of lead ore per fathom; set to six men, at 6l. per ton for dressed ore. The tribute pitch in the old workings under the 20 is worth 22 cwts. of lead ore per fathom; set to four men, at 5l. per ton for dressed ore. The tribute pitch on Lumb vein in the south cross-cut in the 20 west is worth 14 cwts. of lead ore per fathom; set to two men, for the month, at 6l. 5s. per ton for dressed ore. I am not able to give you the produce for May, the tributers not having dressed their ore, but will do so in a few days. We have sufficient ore in the bin to make 40 tons of pig-lead. The machinery is in good working order.

PENHALLS.—S. Bennetts, P. Vian, June 1: The 70 east end contains a very promising lode, and occasionally some good tinstuff, worth from 6l. to 7l. per fm. The west end at the same level, on the same section of the lode, is worth 7l. per fathom. The north part of the lode in the 60 east end is worth 10l. per fathom. The 55 east, on another section of the lode, is worth 8l. per fathom. The various other points of operation remain without much change.

PENSTRUTHAL.—W. Polkinghorne, June 6: Highburrow shaft, sinking under the 88 fm. level: The lode is 4 ft. wide, and more lode still standing to the north; in the last 2 ft. sinking it has made a decided improvement in its character, being more mineralised. From an assay I made of one part of the lode it produced 60 of tin to the ton of stuff; it is also coated with copper ore and mundic. The water is increasing as we are sinking, and from its general appearance there can can be no doubt but what we are nearing a good productive lode. In the 72, driving east and west of Highburrow shaft, we have no change to notice since last reported.—The cross-cut driving south from the 46, west of Highburrow shaft: The men are making good progress in driving, but we have met with nothing to make remark on since last reported. The tin tributers are raising good quality tinstuff, and we hope to sell a good parcel of tin this month.

PLYNLIMMON.—J. Garland, June 6: The new shaft is in fair way of sinking below the 36; now down about 5 ft. Ground also being cut for cistern. In the 36, east of Herbert's winze, the lode is heaved north by a cross joint, and is still letting out a good stream of water; saving work is obtained from this level. The stopes—three in number—maintain their value as given last week. Not having been able to take up the water in the 24, the new stope has not been started as yet. Our drain has broken out through a large vugh in the sole of the level; steps are being taken to remedy this at once. I have started two men to cross-cut south of the 12 opposite old engine-shaft towards the south lode seen at surface; this is a very important trial, which it is to be hoped will lead to good results; there are certainly good chances of opening a new mine by this cross-cut. We have an abundant supply of water, and drawing and dressing are being pushed on as fast as possible.

PRINCE OF WALES.—J. Andrews, June 5: There is little or no change in the deep adit end, driving west of Vigar's shaft, and the lode is much the same as for several weeks past.

ROMAN GRAVELS.—A. Waters, June 4: The 110 north of new engine-shaft, on Roman lode, towards junction of caunter lode, is opening out a wide vein, worth at present 2 tons of lead ore per fathom. The 110 south is in a strong lode, yielding stones of ore; this end is not south far enough to catch the ore ground seen in the 80. The 95 south of said shaft is in a lode worth 3 tons per fathom. The boring machine continues to act well in this end. The 80, south of Matthew's winze, south of shaft, is worth 3 tons per fathom. The 65 south of this shaft is worth 3½ tons per fathom. The stopes throughout the mine continue to yield their usual quantities of ore. Surface work going on favourably. Our regular sampling of 180 tons will take place on the usual day.

SAINT PATRICK.—W. Francis, June 5: There is a little more spar mixed with the boulders in the cross-course on which the 120 yards cross-cut north is being driven, the heading side being firm, and the ground easy for the width of the driving. The upper cross-cut at the 60 yards level progresses satisfactorily in good bearing chert, and another small east and west parting has been cut containing clay and spar.

SOUTH CONDURROW.—W. Rich, W. Williams, H. Abraham, June 5: There is nothing new to report on in the 30, at the engine-shaft, and in the 50, north of the Plantation shaft. The 40 end, east of engine-shaft, is letting out more water, and the lode looks promising to improve. It is now worth 8l. per fathom. The 40 west carries a little tin. The 50 east is opening out wider, and the lode worth 9l. per fathom. The 50 west is worth 8l. per fathom. The 70 west is looking very promising. We have had a hard bar of ground here, which we hope we have gone through. The lode is worth 10l. per fathom. The 80 east yields a little tin. The 93 west is worth 8l. per fathom. The 93 east is worth 8l. per fathom.

SOUTH DARREN.—H. James, June 6: I inspected all the underground bargains yesterday, and find them about the same in value as for some time past, with the exception of the 90 forebreast, which has improved; now worth for lead and copper ores 33l. per fathom. The shaftmen have commenced to-day to drive the 100 east as well as west from the shaft preparatory to fixing a lift at this level as early as possible.

SOUTH DE ERESBY.—June 5: In No. 1 adit there is nothing new in the cross-cut since last week's report. No. 2 adit driving on No. 1 lode is very much improved since last week's report, producing some nice stones of lead. The lode in the shaft is looking very well—a splendid lode. I am glad to tell you the men are making good progress in clearing out No. 3 adit level.

SOUTH MOLTON CONSOLS.—J Harris, T. May, June 1: The ground in the adit level cross-cut is getting into stiff blue killas, which we look upon as a favourable feature for the production of lead, and the level is gaining higher backs as we advance into the hill. We think we ought to meet with our lead lode in the next 25 fms. driving. The men's contract which they took last time not being out there has been no new setting, their price for driving being 35s. per fathom.

SOUTH TOLCARNE.—Wm. Rich, James Knotwell, June 5: The lode in the 36 east is opening out wider, and the water increasing as we extend. The ground is easy for driving in the 24 west, and the lode carries good stones of copper.

TANKERVILLE.—A. Waters, June 4: Watson's shaft is about 14 fms. below the 192 fm. level, and the ground in present bottom is traversed by branches of spar, with small pieces of lead ore mixed. It would seem that the lode is nearer the shaft here than at the 192. In the 192, west of shaft, the vein is split into three parts, and at present is only worth ½ ton lead ore per fathom. No. 1 winze, below the 192, east of shaft, is worth 2½ tons per fathom. We have started No. 2 winze in this level east, the lode being worth 2 tons per fathom. We shall have a richer lode in this winze as we go down, the dip of the ore being west towards the sump. We are preparing to sink a new winze in the 192, west of shaft, in a lode worth 2 tons per fathom. There is no improvement in the stopes throughout the mine since my last full report. The whole of the 100 tons sold last week is ready for delivery, and we are sending it forward in quantities daily to suit the convenience of the purchaser.

TYN-Y-FRON.—E. Jones, June 4: We are continuing the cutting down of the adit level for tramroad. In cutting through the lode in the bottom we find ordinary potters and steel-grained lead ore, splendid solid blende, and in places some rich copper ores, and there is no doubt, in my mind, of a rich deposit of lead being found in depth, and one that will make this one of the most valuable mines in the neighbourhood. I am glad Capt. Jones has come so near your price for the wheel, crusher, and jigs, and I think you will do well to split the difference with him.

TEMPLE.—June 5: No. 1 adit level now shows spots of lead and copper; a considerable distance must, however, be driven before it reaches the point where lead was first cut in the levels above. No. 2 produces fully 2 tons of lead per fathom. No. 3 produces fully 1 ton of lead per fathom. All works are progressing satisfactorily.

VAUGHAN.—June 5: In the deep level east the lode as yet is unproductive, but letting out a good stream of water, and we look forward to having an improvement shortly. In the stopes over the 32 east the lode is larger, yielding 15 cwts. of lead ore per fathom. In the stope over the 20 fathom level the part of the lode carried is 10 ft. wide, yielding 12 cwts. of lead ore per fathom. At surface the masons are building a new powder magazine, and as soon as completed we shall proceed with building a new ore bin. The machinery is in good order. Drawing and dressing pushed forward with all vigour, and we hope to sample on Tuesday next 20 tons of silver-lead ore.

WEST CHIVERTON.—R. Southey, Wm. Roberts, J. Moyle, June 6: The lode

in the 160, west of Batters's shaft, is 2½ feet wide, worth for lead 10*l.* per fathom —North Lode: In the 160 west of cross cut, west of Batters's shaft, the lode is 4 ft. wide, worth for lead and blende 15*l.* per fathom. In the same level east of cross-cut the lode is 3 ft. wide, worth for lead and blende 10*l.* per fathom. In the 150 east of Batters's shaft, on south lode, the lode is 2½ ft. wide, worth for lead 5*l.* per fathom. The lode in the 130 east of Batters's shaft is 4 ft. wide, worth for half lead and blende 12*l.* per fathom. The winze sinking below the 140, west of Hawkes' shaft, is 4 ft. wide, worth for lead 10*l.* per fathom. We are still pushing on the 100 cross-cut north, but no lode or branch has been intersected since the meeting. The usual quantities of lead and blende are being raised, and with better prices we should continue to do very well.

WEST CRAVEN MOOR.—David Williams, June 4: During the month pumping connections between our engine-house and new Blackhill shaft have been fixed, and sinking resumed. I am happy to say the new machinery is working well, and good progress is being made. At the present rate of sinking, providing no accident happens, I expect to be done early next month for an 11 or 12 fm. level below the adit. We have also completed the new wheel pit at the Blackhill floors, and the arms, and most of the segments of the new water-wheel. I hope to have a good parcel of ore ready to smelt at the mill this month.

WEST GODOLPHIN.—John Pope, June 5: Wilson's lode in the 70 driving west is worth for tin and copper 13*l.* per fathom. The other places are just as last reported.

WEST PATELEY BRIDGE.—D. Williams, June 6: No. 2 Shaft: The 32 is extended east and west of shaft about 2 fms; the vein is 2 ft. wide, composed chiefly of limespar, gossan, clay, and stones of lead ore. The intermediate level is extended east of shaft 9 ft. in a vein 2 ft. wide, and producing saving work for dressing. The 20 has been extended during the month 7 fms. 3 ft.; the vein in the end is 4 ft. wide, and producing branches of lead ore. The stope in the back of the 20 west, by four men; vein 2 ft. wide, and worth 10 cwts. of lead ore per fathom.—Craven Cross Shaft: The north shaft is down 34 fms. 4 ft. 6 in. from the surface. At this point the Craven Cross vein underlays parallel with the shaft, and so far as proved, is over 4 ft wide, and on the north wall carries a branch of ore from 8 to 12 in. wide. The 63, west of winze, has been sunk below the 56; the vein is 4 ft, embedded between two well-defined walls, and producing branches of lead ore of fine quality. We have a parcel of lead ore at the mill now being smelted.

WEST ROSKEAR.—H. Stephens, W. Bennetts, June 6: The lode in the 12, driving west, is increasing in size and value; an exceedingly promising lode. Not that we calculate so much upon its present value, but more from the good indications presented at this shallow level for increased productiveness by deeper development. It is now worth for copper, lead, and blende fully 20*l.* per fm. The engine is being put together as fast as possible.

WEST TANKERVILLE.—Arthur Waters, June 4: The 86, south of shaft, is going forward in a strong sparry lode, but at present without ore to value. The two stopes in this level are each worth ½ ton of lead ore per fathom. The lode in the 75 south is small, yielding stones of ore, but not sufficient to value. Two stopes in this level, south of winze, are worth together 1½ ton per fathom. The rise and stope in this level, on the hanging-wall part of the lode, are worth 25 cwts. per fathom; two men stripping said part of the lode downward, lode worth ¾ ton per fathom. Stope in the 63 south worth ¾ ton per fathom, and the stope in the 50 south also worth ¾ ton per fathom. Have delivered 18 tons to Nevill, Druce, and Co., and shall go on with the remainder as quickly as circumstances will admit of.

WEST WHEAL TOLGUS.—June 5: The lode in the 145 end west is not improved since our setting report; we have been expecting to see the south part intersecting the north part ere this, but there is no sign of it yet; the end is yielding about 3 tons of ore per fathom. The two stopes, one east of No. 1 winze, and the other west, in the back of the 145, are opening out very well. The lode in the 135 end west continues hard and poor, with plenty of water. The stopes in this level are yielding very well. The lode in the 125 end west is small and poor. The lode in the winze under this level is 2 ft. wide, with a little ore, but scarcely enough to value. The south part of the lode in this level (125), both east and west of the cross-cut, is yielding 2 tons of ore per fathom, a strong, kindly lode. There is no alteration in the shaft, or in the other bargains at Richards's, since our report last week.

WHEAL CREBOR.—John Andrews, June 4: The lode in the 120 east is 3 ft. wide, worth 8*l.* per fathom. The lode in No. 1 stope in the back of the 120 is 4 feet wide, worth 10*l.* per fathom. The lode in No. 2 stope in the back of the same level is 5 ft. wide, worth 15*l.* per fathom. The lode in the 108 east is poor. The lode in the 72 east is 3 ft. wide, and composed chiefly of quartz and capel. The lode in the 48 east yields good stones of ore, but not sufficient to value. The sinking of the new shaft is progressing satisfactorily, but as yet the lode is poor.

WHEAL KITTY (St. Agnes).—Stephen Davey, Richard Harris, June 1: We have no change to report in either of the bargains during the week.

WHEAL NEWTON.—H. Bennett, June 6: Setting Report: The engine-shaft to sink below the 44, by nine men, at 13*l.* per fathom; the lode is 1 ft. wide, composed of carbonate of iron, sulphur-mundic, and quartz, being a very promising lode. A winze to sink below the 30, on the north part of the silver lode, by six men, at 6*l.* per fathom; the lode has a very kindly appearance. The 20 to drive east of cross-cut, on the Harrowbarrow lode, by four men, at 6*l.* 5*s.* per fathom; the lode is yielding good stones of copper ore. A cross-out to drive north of the engine shaft, by four men, at 6*l.* per fathom, to intersect the north part of the silver lode. The adit end to drive west, by six men, at 3*l.* 10*s.* per fathom; the lode has a splendid appearance, and we are daily expecting a further improvement for silver.—Cook's Shaft: The 50 to drive east of shaft, by six men, at 3*l.* 10*s.* per fathom; the lode is composed of carbonate of iron and flookan, with a little silver. The 50 to drive west, by six men, at 4*l.* per fathom; the lode is of the same character as in the other end. The 40 to drive east, by six men, at 4*l.* per fathom; the lode is 2 ft. wide, presenting a very promising appearance. A rise in the back of this level, by six men, at 2*l.* 15*s.* per fathom; the lode is 2 ft. wide, yielding a little silver ore. No. 1 stope, in the back of the 40 fm. level, by six men; the lode is yielding good stones of silver ore. No. 2 stope, in the back of the 40 fm. level, by six men; the lode is yielding good stones of silver ore. No. 3 stope in the back of the 40, by six men; lode is yielding some rich silver ore. A cross cut to drive north at the 40, by six men, at 7*l.* per fathom, to intersect the Wheal Brothers or old silver lode. A stope in the back of the 40 west of shaft, by four men, at 4*l.* per fathom; lode is yielding saving work for silver. A stope in the back of the 30 east of shaft, by four men, at 4*l.* per fathom; lode is yielding saving work for silver. A stope in the back of the 30, east of shaft, by six men, at 3*l.* per fathom; lode is yielding saving work for silver. A cross-cut to drive north at the 20 east of shaft, by four men, at 8*l.* per fathom; to intersect the north part of the silver lode. A cross-cut to drive north at the 10, east of shaft, by four men, at 5*l.* 10*s.* per fathom; to cut the silver lode. We have now completed the timbering of Bennett's shaft to the deep adit on Wheal Brothers' lode, and hope to commence sinking below that level in the course of a few days; we have here a very promising lode.

WHEAL UNY.—Wm. Rich, M. Rogers, June 4: The lode in Hind's shaft below the 160 is worth 12*l.* per fathom. The rise in the back of the 160 west is worth 8*l.* per fathom. The 160 end, east of Goodinge's shaft, is unproductive. The 150, west of incline shaft, is worth 7*l.* per fathom. We are continuing the 140 cross-cut, south of King's, to prove if there is any more lode standing in that direction. The 140 end west carries a little tin. The 140 east is worth 7*l.* per fathom. The rise in the back of this level is worth 10*l.* per fathom. The back of the 60 west is worth 8*l.* per fathom.

FOREIGN MINES.

ST. JOHN DEL REY.—Telegram from Morro Velho, dated Rio de Janeiro, May 29: Produce twelve days, second division of May, 13,250 oits.=513*l.*; yield, 5·3 oits. per ton = 6·6 oits. by old measurement.

DON PEDRO.—Mine captain's letter, dated April 30: General Remarks: The ore has been obtained from the No. 8 new shoot below adit level and No. 8 shoot east of Bawden's cross-cut north ground. The ore has been of moderate quality. The improvement in the northern side of No. 8 shoot below the adit level, No. 1 stope east, continues; the back laths have communicated to the bottom of the No. 6 shoot stopes. The matrix obtained from the No 3 stope east has been of a lower quality as we have to contend with old workings in the northern side partly filled with low-class ore. No. 4 stope east continues to produce fair quality mineral. In No. 8 shoot, Bawden's cross-cut north ground, Bawden's cross-cut, the end continues in broken ground. In No. 2 stope, east of Bawden's cross-cut, there is very little alteration to note since reported on last. No. 3 stope east continues to produce ore of low quality, being still disordered by a channel of poor ground. In No. 4 stope east the bottom branch is improving both in size and quality.—Alice's West: A force here employed in preparing to open out some stopes up hill on the yellow clay branches.

Prospective and Running Work: In the permanent incline we have changed the laths of four sets below Vivian's shaft, and cleared a large quantity of old timber and debris. Vivian's shaft has been covered over about 8 ft. above the top of the plan-r-lift to prevent anything falling into the same. Symons' shaft has been completed and examined, &c., and is in a good condition. In the adit level four reprieve sets have been put in and blocked. The incline below Symons' shaft is undergoing repairs. The incline rise, west of Bawden's cross cut, is advancing fairly, and we have taken samples of fair quality from the branches. In the stopes east of Bawden's cross-cut the pillar of old timber is advancing well, and several props have been put in where required. In Alice's West a small pillar of old timber has been built to support some of the roof. The cross-cut from Symons' plat to Alice's West is undergoing repairs where required.—Permanent Pumping Machinery: Two sets of stays have been put in, and four additional rolls where required, also four linings. The pitman and smiths and a competent force are preparing a drawing-lift in readiness for sinking. A great many repairs are required above and below the 35 plat, and the 35 to be cleared, ere we can report on the conditions of the bottom of the mine and resume sinking.—Reduction: A new drum has been made and fixed for hauling sand from No. 2 strakes to the wash house, and a new drawing chain put in for drawing the wagon, the old chain being worn out for that purpose, and a great many little jobs have been done in and out of the mine and in the reduction department, two numerous to mention specially.

Captain Vivian reports under date May 4 as follows:—The produce for April amounts to 3078 oits. The small result for this month is owing to the low quality of the ore obtained.—Mine: No. 8 New Shoot, Drainage, &c.: In the No. 1 stope east, or down hill, the upper part of it is communicated to the bottom part of No. 6 shoot, which proves that the No. 8 new shoot is quite separate and distinct from any other, it being below the No. 6 shoot, and above the old No. 8 shoot, therefore showing the great height or thickness of the ore ground at this point—from the bottom of the old No. 8 shoot to the top part of No. 6 shoot, measuring nearly 40 ft. When this ore ground is thoroughly drained, so as to work it to advantage, of course, good results will be obtained; and looking at the extent in width and thickness of same a thorough and economical development is advisable.

RICHMOND CONSOLIDATED.—Telegram from the mine at Eureka, Nevada: Week's run, $82,000, from 1114 tons of ore. Doré bars from refinery, $70,000.

—E. Rickard, May 15: Since my last there is nothing of importance to report from the mine. The winze below the 200 is down 60 ft.; the bottom is about the same as last report—a small streak of ore and irony matter. The 400 main drift is at present in hard limestone. The winze below the 400, from No. 7 chamber, is in hard limestone; we expect to hole to the 500 cross cut in the course of a day or two; when this connection is made we shall begin stoping from the bottom of No. 7 chamber. The drift from No. 7 chamber towards the shaft is in hard ground, also the drift from the shaft to meet this drift is in hard ground; when these two drifts are connected it will facilitate work, the tramming being a straight level from No. 7 chamber to the shaft. No 4 chamber is looking very well, and turning out very good ore. No. 5 chamber is not looking so well as it was; the ore has fallen off in value. No. 7 chamber is now connected with No. 5, consequently, in the upper part of the stope, it is nearly worked out; the bottom of the stope is still untouched. We shall begin to stope from the bottom of this chamber as soon as the winze now being sunk is connected with the 500 cross-cut. No. 8 chamber, below the 400, is looking better than it has for some days past; the eastern end is opening out some very good ore in the bottom of the stope; the ore is narrow, but of good quality. No 9 chamber is looking very well, and turning out large quantities of good ore. The 600, on quartzite, is without any change since my last. The 500 cross-cut is in hard limestone, consequently slow progress is being made. The 800 rise has been connected with the winze sunk below the 700. We have begun to stope the ore found in the rise; at present it is 3 ft. wide, of very fair quality. The 900 still looks very promising, but without ore of any value. The furnaces are in good working order, and smelting the usual quantity of ore—on an average 50 tons per day for each furnace.

ALMADA AND TIRITO CONSOLIDATED.—Telegram from Mr. Breach, May 18: We have remitted you ore and bullion, $6000. Output increasing.

BLUE TENT.—T. Price, May 15: Yesterday I cabled as follows: South Yuba clean-up $9000. The enclosed memorandums will explain to you the exact amount of the clean-up—South Yuba, $8285·05; Gopher, $611·62: total, $8896·67. I did not get the details from the mine until to-day, hence the reason of my cabling the whole from South Yuba. Practically it is really so, as Gopher ravine sluice is only used to remove the upper stratum of the South Yuba claim. I would, however, remind you that so far we have not been able to wash any of the bottom gravel so uncovered to any considerable extent. We will only receive the full benefit of this later on, hence my great anxiety to have an abundant supply of water later into the summer months, and, as you are aware, I am urging upon the Fall Creek Company to complete their ditch as soon as possible, as this will be of advantage to both companies—first, to the Fall Creek Company, because they will be able to utilise the drainage that would be otherwise lost, as the dams are not high enough to impound the total drainage; second, to the Blue Tent Company, as they will have more water during the summer months, and consequently more gold. Our great want at the Tent is more water. So far this season our operations at the South Yuba claim have been as follows for this season:—Total number of days work (days of 10 hours), 84: total number of inches of water used being 104,990; total gold yield being $36,316·22, which is at the rate of 34 57-100ths cents per 10 hour inch of water used—a result, I can assure you, that cannot be excelled by any hydraulic claim in the State of California, and such results should prove to your stockholders that the returns from the Blue Tent are measurable by the quantity of water we can bring to bear upon it. I am satisfied that the Blue Lead will produce just as good results when we have gained into the channel upon that part of the property as we have at the South Yuba opening. So far you cannot fail to observe that the yield at South Yuba is steadily increasing: during the past season it produced in 188 days the sum of $72,859·95. So far this season it has produced in 84 days $36,316·24. With the figures before you it is not necesary that I should enter into any further details.

— June 1: The directors have this day received the following telegram from their manager, Prof. S. Price: Blue Lead claim partial clean up $4100.

MINERAL HILL.—May 13: Troy Mine: Troy winze is going down as fast as can be expected, and the men have nearly completed their contract; the quartz still appears to be gaining in bulk, but still poor.—South Giant: Here we have concentrated all our available force to make the communication between the Giant and Star Mines; the ground is thicker than we anticipated, which is very favourable to our future workings, as it will give us more ground to operate on both in the roof of the Star and south of it. Frances Mine: The branch in this mine is smaller than usual, but we are still driving on it. We have not broken much ore during the past week, our attention being directed to the opening between the Giant and Star Mines. I trust by next week we shall have the opening completed, and be breaking ore in fair quantities.

GOLD RUN.—J. A. Stone, May 18: My last to you was on the 5th instant. Since my partial clean up I have washed about 15 days, and have now commenced cleaning bed rock, and expect to clean up about the 25th inst, and will then cable you the result, which you will receive before this letter reaches you. Although there is not a large piece of bed-rock I believe I shall get a good clean-up. Only about one half of the rock uncovered by the blast has proved to be on the pay rock, the balance being too high. The lower portion of the rock has revealed considerable gold, showing beyond any doubt that a very rich "lead" extends the entire length of our property. I have commenced another powder-drift, and already have it driven 35 ft.; the gravel taken from this drift has been rich, showing considerable gold.

EBERHARDT AND AURORA.—Extract from Captain Drake's letter, dated May 18: North Aurora Mine: In the mine we have about the same showing of ore as reported last week; altogether perhaps the appearance is a little more favourably.—John Wild North: The improvement of ore in these workings, already reported, continues encouraging, though the rock in the face of the drift some days look less favourable than others. From the top of the rise we have commenced drift No. 2 north, in very fair looking ore. The assays as given were the last I have had made. Mr. Hallowell, who does our assaying, is this week held in court as a juror. He is likely to get through the week. I will then have further assays made, and forward the results.—Tunnel: I can say nothing specially new of the face of the tunnel. It is much intermixed with spar, and altogether continues hard running ground. But a change for the better is not unlikely to occur any day. We have no reason to expect it worse.

June 7: Telegram, Capt. Drake: Mine unchanged; John Wild workings looking fairly. Tunnel driven in 3310 ft.; want 2000*l.*

HULTAFALL.—W. Perkins, June 1: The east and west levels in the 14 are looking better than ever. In the main level at the 14, which cuts the lode, I am going to drive a fathom or two further. At the 23 I have had a sett put in, and am now driving a level to cut the lode. We shall meet the lode at 5 fathoms, or perhaps less. The foundations for the reception of the stone-breaker and hauling machinery make good progress. The boilers are up, so that everything is going on satisfactorily and smoothly at the mines. I am making and mending the road from Dahlby to the mines. I have more than half of it now finished, and, as this half was the worst, the farmers are now beginning to cart mineral to the dressing-floors.

PESTARENA UNITED (Gold).—From Pestarena District, 367 ozs. 13 dwts. 3 grs. obtained from 310 metric tons of ore; yield per ton 1 oz. 3 dwts. 16¼ grs. From Val Toppa District, 149 ozs. 2 dwts. 6 grs., from 481 metric tons of ore; yield per ton 6 dwts. 4¾ grs. Total from both districts 516 ozs. 15 dwts. 9 grs. of gold, obtained from 791 metric tons of ore amalgamated; average yield, 13 dwts. 1¾ grs. per ton.

PONTGIBAUD.—June 1: Roure: The 175 cross-cut west, from the engine-shaft, has cut through a small vein, letting out pretty much water; the main part of the lode is yet ahead. The 150 metre level south yields some good orestuff; a part of the lode is being left, the whole being too wide to carry. The same level north yields stones of ore. The 100 cross-cut east has entered more favourable ground. The same level west has entered stiffer ground. The 80 metre level south yields a little saving work. The same level north has opened a good piece of ground during the month, worth ½ ton per current metre; the present value is ¼ ton. The winze in the bottom of the 60, south of Bruyère's winze, yields ½ ton of ore per current metre. The lode in the level, where it is being undercut, yields 1 ton of ore per current metre. The 40 north yields ¾ ton of ore per current metre. The driving of the 40 cross-cut east, from Alli shaft, proceeds favourably. The 20, north and south of cross-cut, on the eastern part of the lode, opens pretty good tribute ground, worth from ¼ to ½ ton of ore per current metre. The adit north, on the same part of the lode, is unproductive. The adit north, on Virginie's lode, yields ¼ ton of ore per current metre.—Mioche: The tribute pitches yield their usual quantities of orestuff.—La Brousse: The 140 cross cut east, south of Bassett's shaft, continues in pretty favourable ground. The 120 metre level south has opened a good piece of ground in the month, but is now unproductive. The 100 metre level, south of air-shaft, yields a little ore irregularly. The 80 metre level south is poor. We have set the 60 metre level to drive south, on the western part of the lode, which at this point is as yet unproductive. The sinking of the new engine-shaft below the 60 goes on satisfactorily.—Pranal: The workings at the 110 metre level have been idle during the month, because of the unusual efflux of carbonic acid gas; we are now putting in a new and more efficient fan to improve the ventilation, and hope soon again to resume working at that level. The 90 metre level south, on main lode, yields a little saving work. The same level, on the eastern part of the lode, yields ½ ton of ore per current metre. The 70 metre level north also yields ½ ton of ore per current metre. The same level south is in disordered ground, and the lode is poor. The 56 metre level north is unproductive. The rise and winze in the same level south yield ½ ton of ore per metre each.—Surface: During the month we have had pretty abundant rains, consequently we have had a good supply of water. Our dressing operations have gone on satisfactorily, and the samplings have amounted to 344 tons.

ALAMILLOS.—May 20: The lode in the 20, west of San Felipe, contains good stones of ore, but not enough to value. In the 25, west of Abercrombie's, there is no improvement. The 40, west of Abercrombie's, and the 40, east of San Enrique, will be holed very shortly, connecting Abercrombie's shaft with the main centre of the mine. The former is worth 1 ton and the latter ½ ton per fathom. The lode in the 100, east of Taylor's, continues unproductive, but the end will soon get under a good lode in the 85. In the 100, west of Taylor's, a great length of valuable lode has been opened up, but the end is poor at present. The lode in the 85, west of San Adriano, is of a promising appearance, and easy for driving, worth ¼ ton per fathom. In the 60, east of San Victor, there is a very wide lode, consisting chiefly of calcareous spar. The lode in the 70, east of San Victor, is large and strong, and opening up a good length of ore ground, valued at 1 ton per fathom. The 60, west of San Victor, has improved in the past few days, there being a good lode in the upper part of the level, producing ¼ ton per fm. In the 40, east of San Victor cross-cut, there is a compact and well-defined lode, and the granite soft and easy for driving, yielding 1 ton per fathom. The lode in the 30, east of Air shaft, is unproductive at present. In the 30, west of Air shaft, a good length of valuable lode has been opened, but it is poor now. In 40 cross cut, south of San Carlos, no lode has been seen. In the 50, east of Judd's, a splendid piece of ore ground is being laid open, yielding 2 tons per fathom. The lode in the 50, east of Jund's, is also very fine, worth 1½ ton per fathom. In the 70, east of Judd's, the lode being split up and unproductive, the driving is suspended temporarily. The lode in the 70, west of Judd's, is small, and at present of no value. Fermin's winze, below the 50, is holed to the 60. In Hidalgo winze, below the 85, there is a promising and productive lode, yielding 1½ ton per fathom. The weekly weighings of ore were well maintained during the past month, and the stopes are yielding fairly well at present. The ordinary work at surface is kept on very regularly, and the machinery is in good condition. We estimate the raisings for June (five weeks) at 225 tons.

FORTUNA.—May 29: Canada Incosa: In the 120, west of O'Shea's, the lode is smaller, and does not contain quite lead enough to value. The lode in the 30, east of San Carlos, is more promising, composed of quartz and lead ore. In the 50, west of Abercrombie's, the lode has fallen off in value, and the ground is very hard; valued at ¼ ton per fathom. In the 60, west of Abercrombie's, the main part of the lode has not yet been met with. The lode in the 50, east of Abercrombie's, has improved, and is now yielding fine lumps of lead ore, and worth 1 ton per fathom. The 70, west of San Pedro, is passing through a long piece of sterile ground. The lode in the 80, west of San Pedro, is opening wider, and contains lead ore, but nothing to value. In the 80, east of San Pedro, the lode is looking better than it has for some time, and is now yielding good stones of ore, and valued at ½ ton per fathom. The lode in the 70, east of San Pedro, is looking well, and is opening very good tribute ground, and yielding 2 tons per fathom. In the 120, east of O'Shea's, no lode of value has yet been met with. The lode in the 100, west of Lowndes's, is small and poor, and the ground much harder. In the 100, east of Lowndes's some very fine stones of ore have been broken in the past week; the lode is not now so good, and worth ½ ton per fathom. The lode in the 90, east of Caro's, is larger and more promising, and yields good spots of ore. Duke's winze, below the 60, is being sunk through good ore ground, yielding 1 ton per fathom. In the sinking of Pablo's winze below the 50, good progress is being made in a productive lode, worth 1 ton per fathom.

Los Salidos: The lode in the 145, east of Morris's, has fallen off in value in the past few days, now worth ½ ton per fathom. In the 130, east of Morris's, the lode has become disordered, and the ground hard. The lode in the 120, east of Cox's, fell off slightly in the fortnight, but is improving again, yielding at present 1½ ton per fathom. In the 110, east of San Miguel, the lode has greatly improved, and is producing fine rocks of lead ore, worth 1½ ton per fathom. The lode in the 65, west of Palgraves, has become very small and poor, and the ground hard. In the 80, east of Palgrave's, there is a compact, regular, and well-defined lode, yielding 1½ ton per fathom. The lode in the 30, east of Palgrave's, is large and open, and producing occasional stones of ore. Fair progress is being made in the sinking of Swaffield's shaft below the 50; it is off the lode. In the boundary winze the lode is small and poor, and the ground hard for sinking.

LANESTOSA.—The cutting down of La Cruz shaft is completed to within 2 fms. of the 50 metre level. In the shaft winze, below the 50 metre level, the lode is reduced to 2 ft., composed of a small leader of blende with gossan and dolomite rock; it is now suspended. The ventilation winze, below the 50 metre level, is also suspended. The lode in the stope in the bottom of the 50 metre level is small, but being all ore yields well for its size; valued at 3 tons per fathom. The stope in the back of the adit is poor at present, the ore being heavily charged with calcareous rock, which makes it of too low percentage for the market; worth 1 ton per fathom. The ore raised for the month is estimated at 30 tons calamine and 10 tons of blende.

LINARES.—May 29: In the 120, east of San Tomas, there is a wide and very promising lode, worth 1 ton per fathom. In the 135 cross-cut, south of Santa Tomas, the granite is compact and very hard. The lode in the 100, east of Warne's, is large, open, and easy, yielding 1½ ton per fathom. In the 115, east of Warne's, the lode is quite unproductive at this point. The lode in the 115, west of Warne's, has a powerful appearance, consisting chiefly of calcareous spar and lead ore, valued at 1 ton per fathom. In the 110, west of Peill's, the lode is compact, regular, and opening a great length of good ore ground, producing 1 ton per fm. The lode in the 90, west of Peill's, continues regular and productive, worth 1½ ton per fathom. In the 120, east of Peill's, a good length of valuable lode is being opened valued at 1 ton per fathom. The 105, east of San Francisco, is passing through a hard bar of unproductive ground. The 90, east of San Francisco, continues to throw open valuable ore ground, worth 1 ton per fathom. In No. 24 winze, sinking below the 105, great progress is being made, lode yielding 1 ton per fathom. The usual weighings of ore were kept up during the past month without difficulty, and there is no change in the stopes at present to notice. The ordinary surface work is kept on very regularly, and the machinery is in good condition. We estimate the raisings for June (five weeks) at 250 tons.—Quintentes Mine: The lode in the 100, west of Taylor's, although small, is better defined than it was. The 90, west of Taylor's, is without improvement, and the driving is suspended for the present. In the 100, east of Taylor's, there is no improvement. The end of the 90, east of Taylor's, is turned in a more easterly direction to get under where there is a good lode in the 85. The 80, east of Addis's, is holed to the level driven west from San Carlos shaft. In the 80, east of San Carlos, there is a strong and very promising lode, yielding fine lumps of ore, worth ¾ ton per fathom. We estimate the raisings for June at 100 tons.

MINING IN AUSTRALASIA—MONTHLY SUMMARY.

THE KURILLA MINE.—The Y. P. Advertiser of March 29 says:—"We paid a brief visit to the Kurilla Mine on Wednesday, and found that Capt. Anthony was dispatching another lot of high percentage ores for England, making the third shipment this year. The mine continues in a highly healthy condition, with hearty promise of a prosperous career. We had the pleasure of inspecting a fine rock of ore, estimated to weigh about 8 cwt., consisting of 18 or 19 per cent. ore—a little brother to the 15 cwt. rock sent to the Paris Exhibition, and which was from 3 to 4 per cent. richer."

THE MOONTA MINES.—The yield of ore from these mines during the half-year ending March 20 reached 10,272 tons, averaging 19 per cent. of fine copper. In consequence of the depressed state of the copper market the directors have continued the policy of curtailing the raising of the richer ores, and this, combined with the low price of copper, will account they say for the non payment of any dividends. The proceeds from the sale of ore during the half year amounted to 74,672*l.*, against which the working expenses have been 91,607*l.*, showing a loss of about 17,000*l.*, but as a set-off to this there are 4127 tons of ore on hand valued at 39,496*l.* The half-yearly meeting was held on March 29. The report was presented and adopted, and a discussion took place as to the policy of selling ore at the present prices, but nothing definite was determined upon.

AUSTRALIAN MINES.

PORT PHILLIP AND COLONIAL.—The directors have received the following telegram, dated Melbourne, May 31:—"Month ending May 22: Gold obtained from company's quartz, 252 ozs.; gold obtained from tributers' quartz, 1092 ozs. Profit, 646*l.* Remittance, 450*l.*"

— April 13: The quantity of quartz crushed on both the companies and the tributers' accounts for the four weeks ending April 27 was 4647 tons. Total gold obtained, 1349 ozs. 10 dwts. Receipts (including 152*l.* 6*s.* 9*d.*, obtained from tributers), 3014*l.* 7*s.* 5*d.* Payments (including 53*l.* paid for firewood and mine timber), 2472*l.* 10*s.* 4*d.* Profit, 541*l.* 17*s.* 1*d.*, added to which was the previous balance of 1757*l.* 10*s.* 1*d.*, making an available balance of 2299*l.* 7*s.* 2*d.* The amounted divided between the two companies was 750*l.*, the Port Phillip proportion of which is 487*l.* 10*s.* The balance as carried forward was 1549*l.* 7*s.* 2*d.* Remittance 450*l.* The company have also received the following telegram, dated the 31st ult.—Month ending May 22: Gold obtained from companies' quartz, 252 ozs. Gold obtained from tributers' quartz, 1092 ozs. Profit, 646*l.* Remittance, 450*l.*

ENGLISH-AUSTRALIAN (Gold).—Captain Raisbeck, April 15: We have expended the cross-cut 420 ft, level 75 ft.; distance from shaft 115 ft. The cross lode has varied much in its course for the last 75 ft.; it will average about 60° south of east, consequently our drive will be double the length by this course to intersect the eastern lode, than it would to have driven due east from engine-shaft. My object in driving upon this course was to strike the lode as far south as possible, and at the least expense. To have driven the cross-cut due east from shaft would have taken 13 weeks to complete the work, and 4*s.* per foot extra cost. Should the cross lode continue its present course, and the eastern lode its regular dip from the 320 ft. level, we shall intersect the lode in 12 weeks from the shaft, provided we do not tap the water. The water when tapped will impede the water progress of the work for a time, as there will be about 140 ft. of water above us upon the course of the lode. Probably you will understand it better by a small tracing enclosed. At the end of the south drive 320 ft. we have driven west 14 ft., and holed to the prospecting shaft; the mine is well aired to this depth. The contractors at the prospecting shaft have sunk 28 feet and secured the shaft well with timber. They finished their contract on the 11th inst. At 12 and 15 ft. from bottom of shaft they passed through two small leaders showing gold. In the course of a fews days I will drive east upon them to prove their worth. I shall also recommence driving the 320 ft. level south.

SCOTTISH AUSTRALIAN.—The directors have received advices from Sydney, dated April 13, with reports from the Lambton Colliery to the 10th of that month. The sales of coal for the month of March amounted to 15,358 tons.

YORKE PENINSULA.—The directors have advices from Adelaide, with reports from the Kurilla Mine, to April 15: The following are extracts from Capt. Anthony's report:—Kurilla Lode: At Hall's shaft the progress made in sinking below the 45 is satisfactory, the present depth being 6 fms. below that level. I have set the whole of the block of ground in the back of the 45, east of the hauling shaft, to stope out at 5*l.* per fathom, where the lode is yielding 4 tons of 20 per cent. ore per fathom. . . . Morphett's Lode: In Morphett's engine-shaft the plat is cut at the 30, and I hope to resume sinking below the 30 in about a week from now. At the 30, east of the engine-shaft, now about 20 fms. long, the lode has again been displaced, but only about 4 ft. north this time; it has, and still is, however, producing good ore ground—say, 4 tons of 17 per cent ore per fathom. At the 30 west we are still driving on the north part of the lode, which part is opening no more than just paying ground. As soon as the pumps are fixed I shall let down the water from the winze, and drive to the south part of the lode. At the 20 east the lode is 14 ft. wide, and although a large portion will require to be crushed and reduced by jigging, it will yield from 8 to 10 tons of good ore per fathom. The winze sinking below No. 1 trial shaft is holed to the 30, and the men are employed stripping down the lode from the winze to the south wall—10 ft. in width is yet standing. Of course I do not know how far the ore will hold good above the 20; one thing, however, is becoming more and more apparent—that this likely to be about the best part of the mine yet discovered. . . . The men who were driving west at the 20 (east of this shaft) from the cross-cut have turned about, and are now driving east of the cross cut a little further north. They have a lode 4 ft. wide, rather hard, but paying for the driving, and leaving in the back and bottom of the drive a large quantity of ore that will pay by-and-bye when it is well opened out by drives and winzes.—Ore Returns: 101 tons of ore had been shipped per Harbinger, leaving on hand at the mine on March 31 last 149 tons of 17½ per cent. ore, and 650 tons of dredge ore of 5 per cent. Arrangements were being made for a further shipment.

ECHOES FROM THE MINING MARKET.

There is no particular change to notice in the mining market, but we are able to say that the tendency is towards improvement, and that business appears more healthy. Lead shares keep in good demand, and some show better prices, Van leading the way with an advance of 20s., the closing price being called 22 to 24. The metal markets maintain the improvement of last week, and the Cornish smelters have advanced their standard for tin 1*l.* per ton.

CHAPEL HOUSE COLLIERY.—In the face of the severe depression that has of late existed in the coal trade it is cheering to find even one company making a profit. The accounts of the Chapel House Company just issued show a profit of upwards of 11,000*l.* on 18 months working, and a credit balance of over 2000*l.* Owing to its situation the colliery has exceptional advantages, and so great has been the demand for coal by its customers that a large stock has had to be purchased; these purchases have resulted in a profit to the company. The colliery now turns out about 300 tons of coal per diem, but when all the works of the colliery have been completed it is expected that the output will reach about 1000 tons per day. The directors of the company announce that all the debenture capital (40,000*l.*) has been subscribed; but as by an arrangement made with the vendor a sum of 10,000*l.* is shortly to be paid off the mortgage the latter holds on the company's property for more than 50,000*l.* it will be necessary to raise further capital, and it is proposed to create and issue 15,000*l.* 10 per cent. preference shares at par. In consideration of the instalment of 10,000*l.*, the vendor has agreed to postpone further payments until July, 1879. This heavy mortgage is the weak point of the company. When the 40,000*l.* worth of debentures were first offered, it was said, if we remember aright, that the issue was made to complete the works and to place the company in a better position with regard to the vendor. Apparently little has been paid since then off the mortgage, and consequently the directors have now to appeal for more money. Doubtless the depression in the coal trade has done much to interfere with the calculations made originally. Still, as the directors have ever since the incorporation of the company professed to work at a profit, we are at a loss to conceive why so much money has been sunk, without any material reduction having been made in the heavy debt to the vendor. The preference shares will most likely be subscribed, and we shall be surprised if their issue does not depreciate the value of the original shares.

RICHMOND.—A good rise has taken place in these shares, and it is believed by many well competent to judge that the price will rise further. The advance has

been due to the good returns from the mine, and the favourable way in which the late very full report has been received by the general body of shareholders.

PENSTRUTHAL.—The sum asked by the directors (2500*l.*) having now been subscribed, it is to be hoped a vigorous development of the mine will follow. We hear of a good discovery in Highburrow shaft, where the lode sinking under the 88 is 4 ft. wide so far as seen, but more of it is standing away to the north. In the last 2 ft. sinking it has improved considerably, and some samples have yielded 6 cwts. of tin per ton of stuff. The agent expects they will soon have a good productive lode. The shares are called 3*s.* to 5*s.*, but the price is almost nominal. There are about 600 shareholders in this company.

EAST VAN.—Just at the close these shares have become flatter, and are freely offered at 4⅜. The fall may be due entirely to market influences, for we have not heard of any change at the mine. The shares, however, have long been supported by the mere fact of the proximity of the famous Van. JAMES H. CROFTS.

The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, JUNE 7, 1878.

IRON.	£ s. d.	£ s. d.
Pig, GMB, f.o.b., Clyde..	2 10 1½	—
,, Scotch, all No. 1 ...	2 11 0	3 10 0
Bars, Welsh, f.o.b. Wales	5 0 0	5 5 0
,, ,, in London.	5 12 6	5 15 0
,, Stafford., ,, .	6 15 0	7 10 0
,, in Tyne or Tees ...	5 10 0	5 15 0
,, Swedish, London ..	9 10 0	(nom.)
Rails, Welsh, at works..	4 17 6	5 0 0
Sheets, Staff., in London	8 5 0	—
Plates, ship., in London	6 15 0	6 17 6
Hoops, Staff.	7 15 0	—
Nail rods, Staff. in Lon.	6 10 0	6 15 0
STEEL.		
English, spring 13	13 0-19	0 0
,, cast 30	0 0-40	0 0
Swedish, keg.....14	0 0	—
,, fag. ham. 15	0 0	—
LEAD.		
English, pig, common...16	15 0	—
,, ,, L.B.....17	0 0	—
,, ,, W.B. 17	10 0	—
,, sheet and bar..17	15 0	—
,, pipe 18	0 0	—
,, red 19	7 6	—
,, white 24	5 0-26	0 0
,, patent shot ...21	0 0-21	5 0
Spanish 16	7 6-16	10 0
NICKEL.		
Metal, per cwt. 18	0 0-20	0 0
Ore, 10 per cent. per ton.24	0 0-26	0 0
QUICKSILVER.		
Flasks of 75 lbs., ware. 7	0 0	—
SPELTER.		
Silesian..... .. 17	12 6	—
English, Swansea 21	0 0	—
Sheet zinc 21	10 0-22	10 0

TIN.	£ s. d.	£ s. d.
English, ingot, f.o.b...	66 0 0	—
,, bars ,, ...	67 0 0	—
,, refined.....	69 0 0	—
Australian	62 0 0	—
Banca	64 0 0	65 0 0
Straits	62 0 0	—
COPPER,		
Tough cake and ingot.	68 10 0	69 0 0
Best selected	70 0 0	70 10 0
Sheets and sheathing.	73 0 0	75 0 0
Flat Bottoms	78 0 0	—
Wallaroo	73 0 0	(nom.)
Burra, or P.C.C.	71 0 0	—
Other brands	69 0 0	—
Chili bars, g.o.b.....	64 0 0	—
PHOSPHOR BRONZE.		
Bearing metal	£112 0	0
Other alloys	£120 0 0-	140 0 0
BRASS,		
Wire	7½d.-	8d.
Tubes.....	7½	— —
Sheets	8¼	- 8¾
Yel. met. sheath. & sheets.	6½	- 7
Nails composition.....	8¾	- 9
TIN-PLATES,*	per box.	
Charcoal, 1st quality...	1 0 0-	1 2 0
,, 2nd quality...	0 18 6-	1 0 0
Coke, 1st quality	0 17 0-	—
,, 2nd quality	0 16 0-	0 16 6
Black .....per ton	16 0 0-	16 10 0
Canada, Staff. or Gla., at Liverpool	11 10 0-	12 0 0
Black Taggers, 450 of 14 × 10	30 0 0-	—

* At the works, 1*s.* to 1*s.* 6*d.* per box less for ordinary; 10*s.* per ton less for Canada; IX 6*s.* per box more than IC quoted above, and add 6*s.* for each X. Terne-plates 2*s.* per box below tin-plates of similar brands.

REMARKS.—The position of our several markets is worse than last reported, both in respect to genuine business and actual stocks, and also on account of the very injudicious speculation that has recently taken place, the legitimate demand being not only temporarily checked by the nominal rise in quotations, slight as it may be, but likely to continue affected, for those who have just been speculating will doubtless struggle hard to maintain prices, in the hope that general business will sufficiently revive shortly so as to enable them to turn over their untimely bargains at a profit, whereas there is no such prospect, and they will thus by further impeding and retarding the ordinary consumption and exports cause increased accumulations to existing stocks, which are already excessive, and this will naturally lead to a very unhealthy state of things, and probably terminate disastrously and unsatisfactorily for the markets. It has hitherto been found extremely difficult to contend with the hardness of the times, and to keep business together at all, and it needs no additional obstacles in the shape of higher prices to be thrown in the way of its recovery, therefore it is to be hoped that holders will take the interest of the trade generally into consideration, and not obstinately refrain from meeting the requirements of legitimate buyers, but make the most liberal concession in order to encourage and stimulate the demand.

After the severe prostration which has been so long and painfully experienced in commercial affairs, it is a little unreasonable to expect that our markets are capable of sustaining any sudden rebound, or that any magic effect can be produced. Political news may by some be considered favourable; but where is the amendment in trade? It has not shown itself yet, and we question its speedy revival. Before any better prices can be realised there must first be signs—unmistakable signs—of a real and substantial improvement. The impetus must come from a sound source, the main source, which is the only reliable and correct one; for without an expansion of commerce there can be no permanent enhancement in the value of merchandise. It is perfectly understood that "supply and demand" are the governing principles and the standard to go by, and it is clearly proved by the increase in actual stocks that the supply up to the present date is in excess of the demand; consequently, sellers are not justified in demanding higher rates, and there is no basis whatever for speculation. Facts speak for themselves, and what we have stated regarding actual stocks is undeniable. No one can dispute that stocks, according to official returns, are heavier; and what greater evidence need be produced to convince any reasonable person of the shallowness of an advance in prices under such circumstances.

The stocks where the increase has occurred are copper, tin, and iron; these metals are referred to more particularly, because the others have not been meddled with, and it may be as well to note here that those which have been left alone to take their own course have not been quoted any higher, and this again is another proof of the absence of any improved legitimate demand. It is most provoking that speculation should have disturbed the equanimity of our market, for *bona fide* buyers are quite unable to pay more now than they could a short time since, and for the plainest of all reasons that nothing has happened to assist them in doing so. It is one of the worst signs to see regular trade falling off and stocks accumulating, for although quotations may be fictitiously maintained for a time, yet the market must necessarily sooner or later take a downward move unless trade alters very materially, and of which there is no chance for months to come, but the markets may not only recede to their former level, but, perhaps, below it, as nothing but speculation has caused the recent advance. Speculators, doubtless, hoped that consumers would be alarmed, and make a rush to buy, but the rush has not come, and speculators may feel a little disappointed that they should have been so grievously mistaken, but speculation has done mischief to ordinary business, and such recklessness is not deserving of success. Now, the markets are spoiled, being under the influence of speculators, and the *bona fide* buyers will have to wait until the markets are put in order again, in the meantime the game of speculation must be played out, and if the British public decline the bait, as they most assuredly will do, speculators will have to play off against one another, and self-preservation induces them to realise as quickly as possible.

COPPER.—The charters for the last fortnight of May have been cabled as 2050 tons, consisting of 1650 tons in bars and ingots, and 400 tons of fine in furnace stuff, all for the United Kingdom. The price, cash and freight from Valparaiso to Liverpool, is 61*l.* 15*s.* per ton. The stock of Chili produce in Swansea and Liverpool on May 31 was 20,302 tons, being an increase of 702 tons during the last fortnight of that month. The stock of foreign in London has also slightly increased, and now stands at 6553 tons, as compared with 4400 tons in the corresponding period of 1877. Quotations have not undergone more than slight fluctuations, the whole tendency of the market, however, has been towards easier rates, and the recent advance has failed to meet with any support. Speculators have scarcely bought enough, or held long enough, perhaps, to induce them to cut their loss entirely at once; nevertheless their ardour has somewhat abated since full charters have been announced, and Chili bars can be bought at 61*l.* 15*s.* at Liverpool; and the stocks in England having so much increased, and the trade being on the decline, are to them additional reasons for uneasiness. But to allow the market to fall is so very serious a matter that every effort will be used to uphold prices; at the same time the difficulty of the task will be very great, and from all appearances will be increasingly so. Their only safety lies in getting quit of their holdings with the least possible delay. An acute dealer never stands to be shot at, and it does not require a vast amount of intelligence to discern that copper is in a weak and unsafe position. By the before-mentioned statement of stocks it will be seen that there are more than 2000 tons of Australian now in London than in 1877, and there also exists nearly 500 tons more of Chili in Swansea and Liverpool. Charters are growing again, and copper can be replaced at a profit.

When this is the case, and trade reveals no symptoms of improvement, there is always the fear that a large portion may be thrown upon the market without the slightest warning, and as it were out the ground from under one's feet. Besides, in a general way holders do not care to retain too large a stake in any one metal, however good it may be; in fact, it is very imprudent to do so at the best of times, and as actual stocks are daily incurring charges it is a matter for grave consideration as to whether a ready price, although it be a reduced one, is not better than holding out for that which cannot be immediately obtained, and thus avoid the risk of a fall in price, and the payment of additional charges. Until stocks are to a great extent cleared away there will be no confidence in the stability of our market, and holders will find it far more conducive to their own interests to part with a few thousand tons than to keep the warrants locked up in their cash boxes. It is impossible that any impression can be made upon stocks until holders make the necessary concessions to enable consumers and shippers to purchase freely, and get the copper out of the way. A waiting game rarely answers, and there is less probability of it doing so now than at any ordinary period, because the markets are so extremely heavy and difficult to move. Sellers will have to do everything in their power to promote trade, and must on no account attempt anything likely to depress it, otherwise it will certainly react upon themselves. Prices must return from where they sprung, and then there may be a fair chance of manufacturers and shippers coming in again and imparting some tone to the market. All that can be realised above 60*l.* for Chili bars may be considered saved, and the sooner holders are alive to this fact the better. We say it in their interest, and they will do well to act upon it before it is too late. "Sell and repent at leisure" is an old maxim, and one that will be found advantageous to adopt at the present time, and we respectfully submit it for the acceptance of holders. It is strange, but not less true, that upon the least downward turn of the market nearly everyone in the trade loudly exclaims "Now for Rogers' price." We merely mention this to show what universal favour and what weighty importance continues to be attached to Rogers' price of Chili bars. In case any of our readers wish to be reminded of that price it is 60*l.* per ton.

IRON.—Merchant orders are particularly scarce, and the town trade is unusually quiet. A little speculation is going on amongst a few houses in Scotch pigs, but even that is not likely to last long, for as soon as the prompts begin to fall in and prices droop, speculators will display more eagerness to get out than they possessed before to get in. Some makers of English bars have been holding for 5*l.* 15*s.* free on board London, and consequently they have lost the chief part of the orders that were offering, as bars have been procurable at 5*l.* 12*s.* 6*d.*, at other places, but this price is not cheap enough to induce much business, nor will be any perceptible increase in the demand while the English ironmaster is undersold. A significant feature in connection with the iron trade is that our active and enterprising little neighbour on the Continent who has shown of late years very superior intelligence, foresight, and capacity for economical manufacture of iron, comes forward this week with a reduced price list for bars, and only quote 5*l.* 3*s.* 6*d.* for No. 1 bars in the Thames; whether less would be taken for a good specification is a matter for negociation, but at that price they publicly announce they are prepared to execute orders. How is it possible then, we would ask, for our ironmasters to obtain higher prices, when other makers are going in the contrary direction? It is ridiculous to stand out in opposition to the spirit of the times, and allow the trade to slip away into other channels. There has been too much of this already, and it is time to effect the necessary alterations, and bring us upon a par with other countries. Our position has been sacrificed by the persisted opposition, whether occasioned by masters or men, we will not now enquire into, although we are disposed to condemn both alike, for there has been shocking bad management, and there exists no better organisation now than formerly, notwithstanding the painful and distressing experience of the past few years, although the matter ere this ought to have been properly adjusted. See how differently and how wisely the Belgians act. They want trade and they take the best means to secure it, instead of quoting higher, deterring buyers from giving out their orders when they might possibly feel a little more confidence in the future. From the turn which political events have taken, they generously solicit and invite orders at lower prices. That is an example worthy to be followed, and one which may be held up to the English iron-producing districts as a paragon of the highest type. All honour is due to Belgium for demonstrating to the world that industry should be considered before avarice, and a reputation for cheapness of paramount importance for security against competition. The English iron trade has lost its place, and it would almost seem that it is irretrievably lost, for no well directed efforts are made to recover it.

What a totally different course is that adopted by sellers here compared with those of Belgium; if the demand is likely to improve the market price is immediately advanced, and buyers naturally get disgusted with such treatment, and either withhold their orders or execute them abroad, and they will continue to do so unless English ironmasters are less indifferent, and manifest a greater appreciation for their customers' orders. Sellers seem to forget that they no longer hold the independent position they once occupied, and that there are other sources of supply besides their own where orders are highly valued. Can it be that our trade has not suffered enough, and that sellers are still insensible to their lost position? We can scarcely think that this is the reason, but what, then, can it be attributed to? We fear from the natural failing—that of being in too great haste to get rich, and thereby overlooking the most material feature for the attainment of that object. The condition of a trade is estimated by its growth, and by this test it will not be difficult to see that owing to the great contraction that exists in the iron trade of this country, it is still on the decline. The returns from the various districts which reach us daily are quite sufficient proof of the monotonous state in which the trade remains, all unanimously complaining of the distressing state of business. For instance, it is reported that business at Barrow-in-Furness is very quiet, especially in hematite brands, and it is said that manufacturers are no better off for orders than they have been for some months past. However, it is stated that no furnaces have been put out of blast, and that the demand for Bessemer continues very fair, though but little business is transacted, in spite of the low prices which are being asked—for No. 1 61*s.* per ton, and No. 3 at 57*s.* per ton at makers' works. We are glad also to see that stocks in this district are reported not so high as they have been, owing to large deliveries of iron having been recently made to the Continent. Iron ore is steady, without showing any alteration in price. There has been but little change on the Newcastle markets, a little more activity having shown itself in pig iron, but other descriptions have remained stagnant, and it is said that many merchants in this district have placed several large orders in Belgium instead of this country, having been able to execute them much more advantageously there than here. This, consequently, has caused short time to be the rule again. The high rate of freights has also been another great drawback to the trade, and prevented the passing of several orders into contracts.

Little or no change has taken place on the markets at Leeds. A fair demand exists for best Yorkshire iron, but other descriptions remain slothful. Hopes are entertained, however, that if politics continue to improve business likewise will become more healthy, but there does not appear as yet to be sufficient confidence in the trade to cause the slightest speculation. Prices continue low, and as last quoted. Some of the works in the Rotherham district appear to be fairly off for orders, and it is stated that the Elsecar Works have reopened, after having been closed ten weeks with disputes between employers and employed. Some of the works are also said to have some good orders on hand, which will keep them in employment for some time to come. Quotations vary but little; and, although low, are apparently too high for many merchants. The improvement in politics appears to have caused more animation on the markets at South Durham and district, but no absolute changes in prices have occurred, and the downward tendency quotations have shown for some weeks past has been checked, 48*s.* 6*d.* being quoted for No. 3, and 47*s.* 6*d.* for No. 4 forge. Little or no change has taken place in the manufactured trade. Ship plates are quoted 6*l.* 2*s.* 6*d.* per ton, but works which have a fair number of orders on hand are said to be quoting higher. Bars remain without alteration, the price keeping very low, and sales being very scarce. Puddled bars are quoted at 5*l.* 15*s.* per ton net, and angle iron at 5*l.* 12*s.* 6*d.*, less usual commission.

The stock in Connal and Co.'s yards in Middlesborough is 63,800 tons, being a decrease of 1215 tons, with warrants in circulation for 62,100 tons. The returns show that the shipments of Scotch pig-iron for the first five months of this year were less than any of the four previous years, being only 163,705 tons, as compared with 186,388 tons in the corresponding period of last year, 190,684 tons in 1876, and 225,276 tons in 1875. But little business is reported to have taken place on the Birmingham markets, though some slight improvement has been observable. Makers of marked bars keep very firm in their quotation of 8*l.* 10*s.* per ton, but common descriptions show a downward tendency, small transactions having taken place at 6*l.* per ton. Sheets (singles) were quoted at 7*l.* 15*s.* to 8*l.* 5*s.* per ton; but it is stated that transactions below this figure have taken place. Hoops quoted at 6*l.* 15*s.* per ton, but there are few enquiries; boiler-plates, from 8*l.* 10*s.* to 10*l.* 10*s.* There appears to be but little speculation, although it was thought that the improvement in the Eastern crisis would have caused it. The American markets are reported dull, and former quotations still quoted. Scotch pig-iron in Glasgow has been fairly active, chiefly through speculation, and prices varying from 49*s.* 9*d.* to 50*s.* 3*d.* Many transactions have taken place. The stock in store shows an increase of 19,030, and now amounts to 175,447 tons, with warrants in circulation for 162,000 tons.

SHIPMENTS.		
For the week ending June 1, 1878	Tons	7,362
For the week ending June 2, 1877		8,237
Decrease		875
Total decrease for 1878		22,997
Imports of Middlesborough pig-iron into Grangemouth:—		
For the week ending June 1, 1878	Tons	7,575
For the week ending June 2, 1877		3,250
Increase		4,325
Total increase for 1878		3,436
FURNACES.		
In blast June 2, 1877		111
In blast June 1, 1878		91

Mixed numbers now close at 50*s.* 1½*d.* cash.

TIN.—The amount of business transacted during the week has been limited, and prices have again slightly receded. The market still assumes a downward tendency, as stocks are unprecedentedly large, and consumers decline to buy in anticipation of requirement. The best thing that could happen to holders would be a heavy drop in price sufficient to check the production. They would then have then have a chance of averaging and getting out of some of their stock; but while prices keep about present quotations the supplies will probably be maintained, to the injury of those who have bought at higher rates and cannot realise without a loss. With a stock in London of about 9500 tons, there must necessarily be some large holdings; and it is said that houses in the North have over 3000 tons of it bought much above current rates; but what good can they expect to do with it when visible supplies are nearly as much again as actual stocks? The quantity of Straits and Australian here and afloat exceeds 14,000 tons, and if Banca and Billiton in Holland are added, it amounts in the aggregate to about 18,000 tons. The variation of a few hundred tons from one month to another out of such an enormous stock is not apparent, and makes comparatively little effect upon prices. It is very desirable, however, to lighten the market; but this can only be accomplished by offering inducements in the shape of lower prices. The deliveries are particularly satisfactory—much greater than they used to be a few years ago; and this plainly shows that the decreased price has increased consumption. A further stimulus of a substantial nature, however, is advisable and necessary; and if prices could be brought down to 55*l.* it would lead to a double test, and disclose the power of production as well as that of consumption. This is the main thing to arrive at, and what is much wanted; for every one seem to be working in the dark, and scarcely know what to do for the best. One thing, however, is clear enough to us—that prices are not sufficiently low to materially affect supplies, or at least not to the extent that will enable stocks to be worked off in any considerable quantity, and the deliveries are as large as they are likely to be unless some further incentive is given.

QUICKSILVER remains at 7*l.*, without any special feature.

THE IRON TRADE.—(Griffiths's Weekly Report).—Friday evening. The market for Scotch pig-iron has been firm this week. Yesterday the Glasgow market closed with buyers at 50*s.* 5*d.* To-day (Friday) the market was weaker, warrants closing with buyers this evening at 50*s.*, sellers at 50*s.* 1*d.* This is 1*d.* higher than the price last Friday (49*s.* 11*d.*) We quote makers' No. 1 iron:—Gartsherrie, 58*s.* 6*d.*; Coltness, 61*s.* 6*d.*; Calder, 59*s.* 6*d.*; Langloan, 58*s.* 6*d.*; Summerlee, 57*s.*; Monkland, 51*s.*, f.o.b. Glasgow; Glengarnock, 56*s.* 6*d.*; Eglinton, 51*s.*, f.o.b. Androssan; Shotts, 59*s.*, f.o.b. Leith. The iron trade has been steady during the week, and in the better qualities, such as Yorkshire and Staffordshire, we have more business doing. Some good orders have been sent down to the Earl of Dudley's. We believe a portion of these were for the Government, although sent through a well-known mercantile house here. A very large Government order has also been given out for best chain cables to Noah Hingley and Sons, of the Great Netherton and Hart's Hill Ironworks. It is specially stipulated that these cables shall be made of Noah Hingley and Sons' very best cable iron. This is one of the largest orders the Admiralty have given out—quite the largest taken by any house in the Black Country.

The enquiries mentioned for steel rails last week have not yet resulted in business. The more settled state of politics has already brought enquiries for 10,000 tons of rails for Russia, and if peace is quickly decided upon at the Congress we shall have some good business for the Baltic and Black Sea ports immediately. A moderate business is doing in sheet-iron for galvanising purposes. Nail rods quiet. Boiler-plates very flat. Not much doing in second class Staffordshire bars. In metals market quiet; copper without change in price; tin weaker, down 15*s.*; spelter very weak—sales have been made at 17*l.* 10*s.*; quicksilver, 7*l.*; other metals unchanged. Tin-plates are still made in larger quantities than the market will readily take, and for I.C. coke ruinous prices are submitted to, which, as we have often said, must work their own cure—we fear in the stoppage of more than one house in the Principality. We have repeatedly stated under this head that I.C. cannot be made and sent to Liverpool for a fraction less than 16*s.* per box. Indeed it costs some houses 17*s.* per box. We forbear to quote the price at which they are being forced on a weak market in Liverpool.

Messrs. FRY, JAMES, and Co.—The improved political outlook has made itself felt in our market.——COPPER has continued to strengthen, and a fair amount has found buyers at the improved rates. There is little change in the positions of stocks or supplies——IRON has shown a little more life in pig, but manufactured is without change.——TIN is again rather firmer, although the recovery is barely maintained at the highest.——SPELTER shows no variation.——LEAD continues heavy, but without quotable change.——TIN-PLATES are still dull, but prices keep steady.

Messrs. PERCIVAL, SANFORD, and Co.—Without settled improvement there is a better enquiry, and more hopeful anticipations are felt in regard to the future.—IRON: In some districts there is a more satisfactory business doing, but we cannot report any advance in prices. Scotch pigs drooped during the past month, but have now recovered to a point above the price ruling at the commencement.—COPPER: Chili bars improved through the month, and a considerable business was done. Manufactured is higher in price, without particular demand.—TIN is better, an advance of 30*s.* a ton having been obtained on Australian, and 40*s.* a ton on Straits, for which there was some enquiry. The arrivals during the month were again large, exceeding the deliveries by 600 tons, but having regard to the reduced quantity floating, the statistical position may be considered favourable. The stock in Holland on May 31 was 3998 tons, against 3498 tons on the same date, 1877.——TIN-PLATES show a better enquiry, and consequent upon the arrangements made by the makers to restrict the make, are firmer in price. We consider prices to have reached their lowest, and we consequently look for an increase in demand and value.——Other metals show little change.

Messrs. PIXLEY and ABELL—GOLD: The arrivals during the past week have been very limited. The Guadiana, from the Brazils, brought 59,000*l.* (chiefly in sovereigns), and the Hindostan, from Bombay, 11,200*l.*; about 55,000 sovereigns have been sent in to the Bank of England, and 122,000 in bar gold has been withdrawn. The demand for export continues good, and will absorb all the bars per P. and O. steamer due about the 10th instant; of the 681,000*l.* expected by this vessel 483,000*l.* consists of sovereigns.——SILVER has been more in demand during the last week, and the supply being exceedingly limited, sales have been made at 53 7-16*d.* per oz. standard for fine bars: at this rate the 5,000*l.* brought by the Sorata from the Pacific was sold. The arrivals from the United States have been quite insignificant. The P. and O. steamer Pekin, leaving Southampton this day for Bombay, takes 23,000*l.* only. MEXICAN DOLLARS have been in demand, the price having risen from 53*d.* per oz., our last week's quotation, to 53¾*d.* and 53½*d.* per oz., sales having been made at both prices, the last being the closing rate this day.

Messrs. BROOKER, DORE, and Co.—IRON: During the month the market has continued dull, and prices of finished iron have further declined about 2*s.* 6*d.* per ton all round. Last week, however, there was spurt in the Scotch market, and warrants which were quoted at 49*s.* 3*d.* on Monday, have advanced to 50*s.* 3*d.*, the shipments showing a heavy increase. A firmer tone was also apparent at the meetings on 'Change both at Wolverhampton and Birmingham last week. Peace now being almost assured, we may look with more confidence for that more in trade which has been so patiently waited for, and which all feel cannot long be delayed.——BALDWIN'S SHEET-IRON: In good demand.——TIN-PLATES are no worse, which is perhaps all that can be said at the moment, but the market is a very sensitive state, and we think that when a change takes place it may probably be a sudden and important one in an upward direction.——GALVANISED IRON: The works at Blackwall are still well employed, and the company is able to maintain its prices, although some makers who are not particular as to quality are selling at much lower figures. Reports by the mail from Australia are not favourable, some of the markets being overstocked, and sales have been effected which leaves a loss to the importers. This state of things is, however, no doubt but temporary, and we look for a prosperous future as regards this branch of the trade, provided that makers will cease selling at or below cost.——LEAD has further declined about 5*s.* to 10*s.* during the month.——ZINC: No change.

The MINING SHARE MARKET shows no particular improvement this week in the actual amount of business transacted, though metals are firmer; and there is, in consequence, a stronger disposition to invest in good mines. The *furore* for some days past has been chiefly for foreign bonds, in which the general public have already lost so much, and seem disposed to lose more.

In reference to mines, it is is gratifying to be able in one week to announce a rise in the standards both for tin and copper, and a firmer market for lead. Should peace be assured, which now seems probable, trade will revive, and with it the requirement of metals, all of which must necessarily advance considerably. Then shares in mines will rise, and the public will rush in and buy, having lost the opportunity, perhaps, of buying when they were low and depressed.

TIN.—The smelters advanced the standard for ore 1*l.* per ton on Saturday last, and though it has given a slightly better tone to the market very few shares have changed hands in any of the mines. Dolcoath, 29 to 31; at the meeting on Monday a dividend of 107*l.*, or 5*s.* per share, was declared. The accounts for the quarter showed labour costs, 8032*l.*; merchants' bills, 3737*l.*; total costs, 11,802*l.* The tin sold was 372 tons, which realised 13,471*l.*, less dues 677*l.* The profit was 1076*l.*, and a balance of 16*l.* carried forward. The costs were charged to May 11. The mine continues to look well, and this quarter's tin is the largest ever sold by the mine in the same period of time; all that is wanted is a better price for it. Six shafts are in course of sinking; the deepest is now 11½ fms. below the 338 fm. level, and worth 80*l.* per fathom. The winze under the 338 is worth 70*l.* per fathom; east winze, 55*l.* The total points in operation are worth 394*l.* per fathom in the aggregate. South Crofty, 9 to 9½; at the meeting here a call of 10*s.* per share was made. The accounts for four months charged up to Feb. 9 showed a loss of 1164*l.*, and a debit balance of 2506*l.* The tin sold (53 tons) realised 1606*l.*; copper (520 tons), 1055*l.* The report states that the East Pool lode has been cut into at the 205, and appears to be daily improving.

Carn Brea, 40 to 42½; Cook's Kitchen, 1½ to 1½; East Pool, 9½ to 9¾; this mine sold 232 tons of copper ore for 800*l.* on Thursday. Penstruthal, 3*s.* to 5*s.* South Condurrow, 11 to 11½; South Frances, 2¾ to 3¼; Tincroft, 11 to 11½. Wheal Grenville, 3 to 3¼; the quarterly accounts for the meeting on the 14th shows—tin sales to May 15 (50 tons 12 cwts.), 1900*l.* 4*s.* 6*d.*; costs to April 20, 1731*l.* 7*s.* 4*d.*; merchants' bills same time, 1237*l.* 14*s.* 9*d.*; loss, 1068*l.* The liabilities are, 1364*l.* 17*s.* 3*d.*; against assets, 244*l.* 15*s.* 2*d.* West Frances, 2½ to 3; Wheal Agar, 3¾ to 4¼; Wheal Kitty, 1½ to 1¾; Wheal Peevor, 6¼ to 6½.

COPPER has been firmer and in better demand for some days, and at the Cornish Ticketing on Thursday, the standard for ore advanced 3*l.* 3*s.* The sale realised 5383*l.*, and the average price of the ore was 3*l.* 15*s.* per ton for 7⅞ produce. Mellanear, 3½ to 3¾; this mine headed the list with 390 tons, which realised 1123*l.* West Tolgus with 324 tons realised 1836*l.*; the shares are quoted 60 to 62½. Devon Great Consols 2½ to 3; Wheal Crebor, 7*s.* 6*d.* to 10*s.*; the ore sampled here (145 tons) is 6 and 6½ per cent. ore, and in 1876 would have realised 4*l.* 10*s.* per ton, and a profit of 200*l.* Now, at the present price it may barely pay costs. Morfa Du, 10*s.* to 15*s.*; the report states that the cross-cut towards the great deposit of blue stone or zinc has been driven 10 fms., and though the agent calculates he has 8 fms. more to drive to get under the main deposit seen above, he has met with a lode yielding good work. Parys Mountain, 7*s.* to 9*s.*; the 90 cross-cut continues to improve. South Caradon, 60 to 70. West Seton, 12 to 14; this mine sold on Thursday 211 tons of ore for 806*l.*

LEAD MINES are still chiefly dealt in, and, in anticipation of a rise in lead, a few of them are advancing in price. Van have been more in request, and have advanced to 22, 24. East Van, 4 to 4½; a cross-cut has been commenced to prove the width and value of the lode in the 55 fm. level west. Roman Gravels, 7½ to 8; the bottom level on the Roman lode, going towards the caunter, is opening out a large vein, at present worth 2 tons of lead ore per fathom. The 110 south yields stones of ore. The usual sampling for the month will be 180 tons. Leadhills, 3½ to 3¾; particulars of the meeting will be found in another column. South Darren, 40*s.* to 45*s.*; the 90 end has improved to 33*l.* per fathom; other places same value as before. The sampling for the month is 40 tons of rich silver-lead ore and 50 tons of good copper. Tankerville have ad-

vanced to 3⅜, 4⅛; the lode in the 192 west is split up, and at present worth only ½ ton of lead per fathom. Rookhope, 17s. to 19s.; Aberdaunant, 7s. to 9s.; Assheton, 1 to 1¼; Denbighshire, ⅜ to 1; D'Eresby Mountain, 85 to 100; D'Eresby Consols, 10 to 12.

Glenroy, 15s. to 20s.; Glyn, ½ to ¾; Grogwinion, 3 to 3½; Great Laxey, 18½ to 19½; Herodsfoot, 5 to 7; Pandora, ¾ to 1; Great Holway, 4½ to 5½; Bodidris, 1⅛ to 1⅜; Tyn-y-Fron, 1⅜ to 1⅝; Van Consols, ¼ to ½; West Chiverton, 9 to 10; West Tankerville, ¼ to ½; Wye Valley, 1¼ to 1⅝; West Wye Valley, 2½ to 3. At Cargoll meeting the accounts showed a balance against the mine of 598*l*. West Pateley Bridge, 2 to 2½; the agent writes—"The lode in Craven Cross shaft is 5 to 6 feet wide, carrying a leader 8 to 12 inches in width on the north part. A parcel of lead is being smelted." Red Rock, 2 to 2½; St. Harmon, 2½ to 3½.

FOREIGN MINES.—Cape Copper, 33 to 35; Almada, 5s. to 10s.; Chontales, 10s. to 12s. 6d.; Don Pedro, ½ to ⅝; Eberhardt and Aurora, 7½ to 8; Exchequer, ⅜ to ½; Frontino and Bolivia, 1½ to 2; Javali, 7s. to 9s.; New Zealand Kapanga, 7s. 6d. to 12s. 6d.; Last Chance, 1 to 1¼; New Quebrada, 1⅜ to 1⅝; Panulcillo, ⅞ to 1; Port Phillip, 10s. to 12s. 6d.; Richmond, 11½ to 12; Santa Barbara, 1 to 1¼. St. John del Rey, 300 to 310; the directors at the meeting on the 26th will propose to pay a dividend at the rate of 17½ per cent. for the half-year, free of income tax.

The Market for Mine Shares on the Stock Exchange has fully maintained the improvement noticed last week, although it has to-day been slightly affected by the approach of the Whitsun holidays. As there is a general improvement in the metal markets, and a rise of more than 3*l*. in the copper standard on Thursday, there is naturally a more hopeful feeling. At Devon Great Consols the bad feeling existing seems to be gradually passing away, the agents and monthly men, who for their ends alone were covertly inciting the miners to continue the complaint, having probably ascertained that further opposition is useless. The Richmond Shareholders' Committee's report (which is to a great extent neutralised, if not entirely answered, by that of the directors, abstracted in another in another column) contains a disheartening statement as to the way in which the mine has been managed, and some very strong observations concerning Mr. Probert. The report has as yet been circulated among the shareholders only, but the contents of it are fully discussed in the letter of a shareholder—Mr. W. Gabbott—published in the Supplement The mine has already returned 4*l*. 11s. 6d. as dividends upon each 5*l*. share, or 18s. 3½d. in 1*l*. upon the entire capital invested, the mine being at the present time in good condition. This is more than can be said of any other Anglo-American mine, except Sierra Buttes, which has returned 19s. in 1*l*. No other mine of this class has returned more than a few shillings—usually 2s. or 3s. in 1*l*., if they have entered the Dividend List at all—and the shareholders should be cautious not to "improve" the management so effectually as to deprive themselvee of future dividends altogether. It would not be the first time that such a result has been achieved. Moreover, it should not be forgotten that the mine did not yield profits previously to Mr. Probert taking control; that the dividends have been fairly regular ever since, and that the mine is now earning (taking the last six months' workings to estimate upon) over 210,000*l*. a-year, or about 78 per cent. per annum profit upon the entire capital of the concern, These are a few of the proofs of Mr. Probert's incapacity.

Scottish Australian Mining, 1½ to 1⅝; preference, ⅝ to ¾; the company has just declared another dividend at the rate of 15 per cent. per annum. The directors have received advices from Sydney, dated April 13, with reports from the Lambton Colliery to the 10th of that month. The sales of coal for the month of March amounted to 15,258 tons. Yorke Peninsula, ¼ to ½; preference, ¾ to 1; 101 tons of ore have been shipped per Harbinger, leaving on hand at the mine on March 31 last 149 tons of 17½ per cent. ore, and 650 tons of dredge ore of 5 per cent. Arrangements were being made for a further shipment. Port Phillip and Colonial, ⅛ to ⅝; the company's profit for the four weeks ending April 27 was 542*l*., and to May 22 it was 646*l*. Two remittances (850*l*.) have been sent.

St. John del Rey, 300 to 310; the latest telegram received from Morro Velho, dated Rio de Janeiro, May 29, states that the produce for the second division of May, 12 days, was 13,250 oits., of the value of 5134*l*., the ley of the ore being 5·3 oits. per ton, or 6·6 oits. by old measurement. The directors have announced that the forthcoming dividend will be 17½ per cent. for the half-year. The last dividend was 2½ per cent. for the half-year. Don Pedro North del Rey, ⅝ to ¾; the manager writes that the produce for April amounts to 3078 oits. The small result for this month is owing to the low quality of the ore obtained. No. 8 new shoot is quite separate and distinct from any other, it being below No. 6 shoot, and above old No. 8 shoot, therefore showing the great height or thickness of the ore ground at this point—from the bottom of the old No. 8 shoot to the top part of No. 6 shoot, measuring nearly 40 ft. When this ore ground is thoroughly drained, so as to work it to advantage, of course good results will be obtained; and looking at the extent in width and thickness of the same a thorough and economical development is advisable. Almada and Tirito, ⅛ to ¾; the telegram from the mine dated May 18 states that $6000 worth of ore and bullion has been remitted, and that the output is increasing.

Richmond, 11½ to 12; the usual weekly telegram from the mine at Eureka states that the week's run was $82 000, from 1114 tons of ore. During the week the refinery produced $70,000. From the report of the committee of investigation, appointed at the general meeting in August last, it may be predicted that unless the shareholders be fairly unanimous in supporting the directors the concern will become involved in litigation, to which all that has yet been passed through by the various Anglo-American mining companies will be as nothing. The whole question of principal and agent, which is recognised by every English lawyer to be one of the most difficult with which the Courts have to deal, will be raised in its most complicated form, since the laws and customs of both England and America will be involved, and Mr. Probert occupies an exceptionally peculiar position. In the American Courts the only company having a *locus standi* is the Richmond Mining Company of Nevada, which, legally speaking, is totally distinct from the Richmond Consolidated Mining Company (Limited), to which the property justly belongs; and although it is not to be supposed that Mr. Probert will take any unfair advantage of his position, he can quite readily should he feel disposed to do so, follow the example of the late Mr. Edward Oxenford, of the National Brazilian Mining Company and the Emily Mine, declare that in the particular matter in dispute the English Courts have no jurisdiction, and claim his full rights as recognised by the American law. It appears that Mr. Probert is the acknowledged proprietor, so far as the Richmond Company is concerned, of the Luce Fils and Rozan process, at present used at the mines, and has received a royalty upon all ores treated by it. The question is, and this must be determined according to American law, whether Mr. Probert can legally hold simultaneously the proprietorship in his individual capacity of the Luce Fils and Rozan patents and the office of trustee and vice-president of the Richmond Mining Company of Nevada? Now, the dilemma of the London company appears to be this: they cannot prove that they and the Nevada Company are one and the same corporation—legally they have no connection with each other—nor can they prove that a servant of an English company is incompetent to acquire patent rights in the United States, and to license an American company to use those rights. This is only one of the 50 difficulties which would have to be encountered by the London company in litigating the matter, so that it may be hoped in the interest of all concerned the shareholders, should they be unwise enough to quarrel with Mr. Probert, will see the wisdom of paying Mr. Probert all salary and royalty due to the date of dismissal, and have no more to do with him or his process. With regard to the recommendations of the committee, taken as a whole they are excellent in their way as pointing out what may be done for the future, and which recommendations really seem to have been already adopted almost as far as practicable, but as far as it concerns the past the shareholders will do well to "let bygones be bygones," content themselves with the handsome dividends which they have received, and which might even be attributed to the questionable contract with Mr. Probert, and continue to keep the mine in the Dividend List rather than hand over the oyster to the lawyers and retain for themselves nothing but the shells.

Eberhardt and Aurora, 7⅞ to 8½; a telegram received from the mine to-day states that the mine is unchanged, and that the John Wild workings are looking fairly. The tunnel is driven in 3310 ft. They want 2000*l*. The last report states that the face of the tunnel is much mixed with spar, and altogether continues hard running ground. A change for the better is not unlikely, and there is no reason to expect it worse.

The latest advices from the "bonanza" Comstock Mines state that the header continues in hot and dry Comstock formation, and is pushing ahead at the rate of between 50 and 60 ft. per week; total length of tunnel, 19,648 ft. The daily yield from the Consolidated Virginia is 350 tons, keeping the California mill steadily running, and 400 tons from the California, which is being sent to the mills as fast as possible. Most of this ore is taken from the stopes on the 1600 and 1650 levels, which continue to show well, and yield good ore. Re-timbering the Consolidated shaft is proceeding at the rate of 9 ft. per day.

The steady development of the mining districts of Arizona has, it is said, "created no little interest among miners and capitalists, many of whom see in the Territory another El Dorado. The more the country is opened up the more its mineral wealth becomes apparent, the greater is the assurance that it will before long rival, if not surpass, the Nevada itself in the number and richness of its mines, which are springing up every day. A number of Californian capitalists are becoming largely interested in mining property in that region."

The Market for Hydraulic or Gold Washing Shares has been quiet, with but a small amount of business. Prices remain unaltered. Water continues abundant. Blue Tent, 2½ to 3; an interesting letter from the manager will be found in another column. The result of the working in South Yuba claim this season so far shows an increased return. A telegram received during the week announces a clean-up at Blue Lead claim, the result being $4100. The canal is supplying a splendid stream of water, and washing is steadily kept up.

Hornachos, 15 to 16 the company has received a further shipment of 60 tons of silver-lead ore from the Decuidada Mine, making a total of 310 tons received since Jan. 1. The average price of the 250 tons already sold has been 30*l*. 18s. per ton.

Hultafall, 4 to 5; samples of the slimed ore have been sent to the office, and an assay of it shows 79 per cent. metallic lead. The agent reports that both the ends at the 15 fm. level driving in the lode are in rich lead and blende, and that the lode is looking better than at any former period. A cross-cut has been commenced from the 25 fm. level—that is, from the bottom of the shaft—to intersect the lode, which is expected to be cut in about 5 fms. driving. The indications are favourable for cutting a rich lode. The additional dressing machinery was sent out partly by last week's boat, and the remainder leaves to-morrow from Hull for Gottenburg. The whole will be in its place, from present appearances, at the end of the current month.

Lead Mines have been in more active demand, with in many cases advancing prices. As favourably affecting the future value of the produce of most home lead mines, attention is being directed to the circumstance that the American lead recently imported into China and Japan has proved altogether unsuited for the purposes required, and that orders from those countries are again being received here. Van have improved to 23, 25; there is no change reported; the various operations underground, and at surface are progressing in the usual satisfactory manner. Grogwinion, 3 to 3½; operations at the mine continue to make satisfactory progress, particularly in the recent new discoveries. Wye Valley, 1⅝ to 2; no fresh news. West Wye Valley, 2½ to 3; the agent reports that the bottom level has improved. Red Rock, 2 to 2½; the new discoveries are still looking well, and increasing in value. Caion, 2 to 2½; good progress making in erecting machinery, &c. St. Harmon, 2½ to 3; the prospects continue favourable for further discoveries.

Assheton, 1 to 1¼; the mine has been favourably reported upon, and a much larger output is looked for. West Asheton, 1 to 1¼; the developments here are fully confirming the favourable opinion of the newly-appointed manager, and important results are anticipated as the explorations approach Tyn-y-Bwich, which is increasing in productiveness and value.

Pateley Bridge, 2½ to 3½; the 33 east, on Rake Vein, is temporarily disordered by a cross course. The agent is of opinion that it will improve again as the end is driven forward, now worth 1 ton of lead ore per fathom. The west end, on the same lode, maintains its former value. The various tribute pitches and stopes throughout the mine are producing the usual quantity of lead ore. The ore on hand is equal to 40 tons of pig lead. West Pateley, 2 to 2½; the discovery in the Craven Cross shaft is thought likely to prove of value to the future of the mine. Other points are without change. Another parcel of lead is being smelted.

Subjoined are the closing quotations:—

Assheton, 1 to 1¼; Carn Brea, 41 to 43; Devon Great Consols, 2¼ to 3; East Caradon, ¼ to ½; East Van, 4¼ to 4½; Glenroy, ¾ to 1; Glyn, ⅝ to ⅞; Great Laxey, 19 to 20; Hingston Down, ⅛ to ⅜; Leadhills, 3½ to 3¾; Marke Valley, ⅝ to ⅞; Parys Mountain, ⅜ to ½; Pateley Bridge, 2 to 3; Penstruthal, 3s. to 5s.; Roman Gravels, 7½ to 8; Rookhope, ¾ to 1; Tankerville, 4 to 4¼; Tincroft, 10½ to 11½; Tyn-y-fron, 1¾ to 1⅝; Van, 22½ to 23¾; West Assheton, 1 to 1¼; West Chiverton, 8½ to 9½; West Pateley, 2 to 2½; West Tankerville, ¼ to ½; Wheal Grenville, 3 to 3½; Almada and Tirito, 3-16ths to 5-16ths; Argentine, ¼ to ¾; Birdseye Creek, ¾ to 1; Blue Tent, 2½ to 3; Cape Copper, 33½ to 34½; Cedar Creek, ⅛ to ⅜; Chontales, ½ to ⅝; Colorado Terrible, 3⅜ to 3⅝; Condes of Chili, ¼ to ¾; Don Pedro, 11s. to 13s.; Eberhardt and Aurora, 7¾ to 8¼; Exchequer, 2s. to 4s.; Flagstaff, ¾ to 1; Frontino and Bolivia, 1⅝ to 1⅞; Hornachos, 15 to 16; Hultafall, 4 to 5; I.X.L., ⅛ to ¼; Javali, 6s. to 8s.; Kapanga, ⅜ to ⅝; Last Chance, 1 to 1¼; New Quebrada, 1⅝ to 1⅞; Oregon (pref.), 4 to 4¼; Pestarena, 4s. 6d. to 5s. 6d.; Plumas Eureka, 2⅝ to 2¾; Port Phillip, ½ to ⅝; Richmond Consolidated, 11½ to 12; St. John del Rey, 300 to 310; Sierra Buttes, 1¾ to 2½; South Aurora, ⅛ to ¼; Tecoma, ⅛ to ¼; United Mexican, 3¼ to 3¾.

COLLIERIES.—The past week has been a somewhat broken one, owing to the Epsom races, and the attention of the investing and speculative public has been to a great extent drawn away from this class of shares by the extraordinary and rapid rise which has taken place in most of the foreign and railway stocks. The coal and iron trades are much the same as they were last week, the tendency in each however being towards improvement. Colliery owners are becoming still more confident of better times, as the prospect of a peaceful settlement of the Eastern Question appears to be more certain. If the forthcoming Congress leads, as everyone hopes and believes it will, to a long and satisfactory period of continental peace the expansion which our home industries will show will astonish some of those who have been persuading themselves that England's foremost rank amongst the coal and iron producers of the world has been lost.

There is already some, and there are signs of still greater, improvement in the coal and iron fields of South Wales. Of course the house coal trade is, as usual at this time of the year, somewhat quiet, but steam coal is in good demand, and shipments continue to be very large.

The Chapel House accounts and the directors' report have been issued, and the result of the past working appears to be most encouraging. The colliery accounts show a profit of nearly 2s per ton on an output of 115,750 tons of coal, and the directors state that they are confident of reaping at least an equal rate of profit on the increased raisings which will be obtained by means of the new machinery, now within about a week of being completed. It is anticipated that in a short time this machinery will be raising 1000 tons per day, and if this can be done (and we see no reason why it should not) the profits will be very large, and will justify the declaration of large dividends. The shares are well and firmly held at 3¼ to 3¾.

A good many enquiries have been made for Ynisedwyn shares, and the company promises to be a great favourite in the market. Dividends of 12 or 14 per cent. are looked forward to with confidence, and with the exceptional advantages possessed by the property as regards situation, extent, and qualities of minerals, and facilities of manufacture and conveyance of materials to market, we shall not be astonished at dividends of a much higher amount. Alltami shares are quoted 3½ to 4. We have no particular change to note as regards the working, but these shares may be enquired after at present prices as trade revives. We understand that the output of Llay Hall is to be increased to 500 tons per day. The shares close at 6 to 8. Cardiff and Swansea, ¾ to 1⅛; New Sharlston, 3¾ to 4⅛; Newport Abercarn, 4 to 4¼; Thorp's Gawber, 2¼ to 2¾.

At Bedruth Ticketing, on Thursday, 1433 tons of copper ore were sold, realising 5383*l*. 9s. 6d. The particulars of the sale were—Average standard, 87*l*. 13s.; average produce, 7⅜; average price per ton, 3*l*. 15s.; quantity of fine copper, 106 tons 7 cwts. The following are the particulars:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
May 2.	1653	£ 83 2 0	7¼	£3 14 0	9s. 6d.	£47 13 0
,, 23.	2517	87 13 0	6¾	3 5 0	9 6	47 12 0
June 6.	1433	87 13 0	7⅜	3 15 0	10 1½	50 12 6

Compared with the last sale, the advance has been in the standard 3*l*. 3s., and in the price per ton of ore about 4s. 6d. There will be no sale on June 13.

*** With this week's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: Argentine Mines; Cape Copper Company; the New Speculation—Gold Mining; New Quebrada Company (R. Lorimer); Richmond Mine; an Examination into the Position and Prospects of Certain Mines—No. VII.; Richmond (W. Gabbott); Rock-drills—the Proposed Competition (Le Gros, Mayne, Leaver, and Co.); Practical Mining—Parabolic Lodes; Boscaswell Downs (A. Milsted); Devon Great Consols; Devon Consols—Co-operative Stores; Co-operative Stores for Mines; Wheal Peevor; Wheal Grenville, and its Management—Registration of New Companies—the Scotch Mining Share Market—Foreign Mines and Metallurgy—Patent Matters—Meetings of Mwyndy, Don Pedro, Fuller's Reef, Leadhills, and South Crofty Companies, &c.

WEST PATELEY.—The important discovery in the Craven Cross shaft (referred to last week) is thus described in the official report, which appears in another column:—"So far as proved the vein is over 6 ft. wide, and on the north wall carries a branch of ore from 8 to 12 in. wide." At this point—34 fms. from surface—the vein underlies parallel with the shaft. The value of this discovery is in the fact that it has been made where the old miners have repeatedly asserted there would be found something like 3 ft. of solid lead. The opinion at present seems to be that this celebrated Craven Cross vein, where wrought by the "ancients," has been taken away for 2 or 3 ft. in width, which it is thought was solid ore, and as the shaft was allowed to run together. The north portion of the vein—also about 3 ft. wide—broke down, and must have contained the rich ore discovered last week, one stone of which weighs over 3 cwts. of solid ore. This portion of the lode evidently was not discovered by the old miners. Importance is attached to the significant feature that the matrix of this vein is dissimilar from that of the vein now being opened out below the 56, which is 4 ft. wide, producing branches of lead ore of fine quality. Another parcel of lead is being smelted at the mill.

Notices to Correspondents.

*** Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be *filed* on receipt; it then forms an accumulating useful work of reference.

MINING JOURNAL VOLUMES WANTED.—Any subscriber possessing duplicates of Vols. I., II., IV. (A.D. 1835, &c.), or of the volumes for 1851, 1852, 1853, 1856 1857, 1860, 1861, and willing to dispose of them will oblige by sending particulars of price, condition, &c., to the Editor, *Mining Journal* Office, 26, Fleet-street

PRICES—"N. N."—The observation—"It is rather unfair to the house" is unintelligible, as it cannot be the "Stock Exchange" alluded to; since many of the prices given are not those quoted on the Stock Exchange, and many of the concerns named are utterly unknown to that body.

ROCK-DRILLS.—In my letter referring to rock-drills, and which appeared in the Journal of June 1, the initials of my name are "S. H." They should be—A. H. ELLIOTT: *London, June 5.*

Received,—"P. B." (New York)—"M. N." (Chelsea)—"Shareholder" (York) should address his letter to the directors—"Shareholder" (Richmond)—"Constant Reader" (Redruth)—"Stannum" (St. Just): We have already published the particulars—"Old Miner" (Gwennap): See the report of Dolcoath meeting in another column—"Looker-On" (Manchester)—"C. M. E." (Bristol): A letter sent to our office will be forwarded—"G. A." (Sheffield)—"Original Shareholder" (Richmond)—"Mendips"—"Shareholder" (Great Lovell)—A. Francis—C. Bawden—"H. C. C."

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, JUNE 8, 1878.

EXPLOSIONS, AND EXPLOSIVES IN MINES.

That those who descend into the bowels of the earth for the purpose of opening out the treasures that are found far below the surface are liable to considerable danger is admitted on all hands, but that the risk can be greatly lessened by precautionary measures being taken by every person who takes part in underground operations is equally undeniable. Most of the terrible accidents that have taken place in our mines have never been satisfactorily accounted for, yet we have it on record that almost every day men go down into the most fiery pits having in their possession all the requisites necessary for causing an explosion, and these there is every reason to believe are frequently used to the serious danger of large numbers of persons. Thus men have been seen smoking in mines where large quantities of highly inflammable gas was known to exist; in the possession of others pipes and matches have been found, whilst damaged and unlocked safety-lamps are constantly met with in the miners' working places. Here then are all the essentials for forming an explosive mixture that in a moment is capable of destroying hundreds of lives with the quickness of a flash of lightning. Such are the facts that come before us almost every day in the newspaper reports. Yet we find that in the House of Commons, and outside of it as well, attention is constantly being called to those who assume the functions of leaders and advisers of the mining body to the frequent accidents that take place in collieries from explosions of fire-damp, which they attribute to the shortcomings of owners and managers in neglecting to carry out the provisions of the Mines Regulation Act, or the want of proper and efficient inspection on the part of the Government officials. No other persons, according to these gentlemen, can contribute towards an accident caused by fire-damp. Consequently whenever a fearful catastrophe at a mine takes place, involving considerable loss of life, colliery owners, managers, and Inspectors are brought before the bar of public opinion as the persons who have been the cause in a great measure of the accident, owing to some dereliction of duty or other cause. It may be that there is a charge of naked lights having been used where safety lamps only should have been tolerated, blasting by gunpowder where the coal should have been brought down by wedging, or the ventilation has been so neglected that the volume of air passing through the workings was insufficient to dilute the gas, whilst the Government Inspector may be charged with having neglected his duty in not having examined the mine immediately before the accident instead of afterwards, when his so doing might have averted the catastrophe.

These are some of the stock statements generally made use of by the philanthropic agents and leaders of our miners, some of whom would almost appear to look upon a large destruction of life in a mine, although preventible, as something to be thankful for, seeing it gives them desirable pabulum for denouncing in the most ferocious terms the cupidity of capitalists and mine-owners, who they aver, for their own sordid purposes, are careless of the lives of those they employ, and only look to the profit they make from the labour of each individual for the purpose of increasing their ever-growing wealth. That this is no exaggeration will be borne out by those who have heard the harangues of the men who are considered the chiefs of the mining body. But some of them go much further than what we have stated. One of these leaders, who is now a lawmaker, in addressing a large assemblage of miners immediately after an explosion in which many lives were lost, denounced the owners of the colliery where it occurred as having been guilty of little short of murder, and gave it as his opinion that the hanging of them would be beneficial as an example to the other owners of mines in the same district. As might be expected, this language was applauded by those to whom it was addressed, for it was gratifying to them to be informed on such authority that accidents of every description that took place in mines were to be laid to the charge of those who were placed above them, either as owners or managers. Yet many of those who were present at such gatherings must have known, on the slightest reflection, that such was really not the case, for not a few of them had suffered for breaches of the general rules or bye-laws, for which they had been either fined or imprisoned. Many of these offences were such as might have led to heavy loss of life, as had been the case, no doubt, at not a few places. Now, no persons know better than those who claim to be the chiefs and advisers of the working miners of this country that very many of the latter are not only negligent but reckless, and will risk their own lives as well as the lives of others for their own selfish gratification, or to save a little trouble will run the risk (say) of a heavy fall of roof or coal, from which more fatalities take place yearly than from any other cause.

These truths are patent to every person who is at all acquainted with mining operations, yet we never hear of the leaders of the men warning them against infringing the rules and regulations laid down for their guidance and safety, or enforcing upon them the necessity of doing all they can to prevent the possibility of an accident. Surely this is what might be expected from those who claim to have the power to control the actions of the workers in mines. So far, however, from doing this, the so-called leaders appear actually to encourage the men who break the rules that are framed for their own safety. Of this we have constant proof, for we find that in most districts where men are brought before benches of magistrates charged with acts that might lead to serious calamities the heads of the association at once employ the best counsel to defend them, so that if they chance to get off they can repeat the same offence without any fear as to the consequences. If this is not encouragement, or aiding and abetting in acts that may lead to the destruction of many lives, we do not know what to term it. Such cases as we have alluded to are of daily occurrence, and we have only to take up the papers printed in different mining districts to read of serious charges preferred against miners, and to find that they are defended by the best legal talent without costing the offenders a penny.

Many such instances we have now before us, and a few samples from one district alone will bear out to the fullest extent what we have stated. In a Barnsley paper we find under the head of "A Batch of Reckless Colliers," that a miner named ANDREW PASKELL was charged with neglecting to draw down the wick of his safety-lamp when the glass was cracked, contrary to the 38th special rule in force at the Stanhope Silkstone Colliery. Mr. CLEGG, of Sheffield, who was instructed by the officials of the Miners' Association, defended. The defendant was fined 10s. and costs. The next case was against WILLIAM TIMMINGS for neglecting to put the light of his safety-lamp out when the gauze was damaged. The defendant was defended by Mr. CLEGG, but was fined 20s. and costs. At the same time SAMUEL DODD, JOHN CARR, and EDWARD DAVIS were charged with wilfully unlocking a safety-lamp. Mr. CLEGG again defended, and got the men off on the ground that the complainants had not made out their case. It will be seen that had there been a large accumulation of gas any of the acts enumerated would have led to an explosion with all its attendant horrors. Again, on Friday last at the same place two men were fined 20s. each and costs for taking matches into the East Gawber Colliery. But magistrates, it may be said, at times take singular views of the law, and Mr. WARDELL, the Government Inspector of Mines for Yorkshire, points out a decision of the Rotherham Bench, which if sustained would tend to nullify one of the most important provisions under the Act. A collier employed at the Aldwarke Main Colliery, where locked safety-lamps are used, was found at work with a pipe in his possession. He was brought before the magistrates, who dismissed the charge on the ground that it was incumbent on the prosecution to prove that the pipe was the defendant's property. If this ruling were correct, then men could take into pits matches, tobacco, or anything else calculated to lead to an explosion. Such cases could be multiplied *ad infinitum*.

As Mr. MACDONALD has given notice that after the Whitsuntide holidays he will call the attention of the House of Commons to the frequency of mining disasters, the history of which he states shows that many of them have resulted from negligence, it is to be hoped he will point out where the negligence mostly rests. Perhaps he will also give his opinion as to whether he considers the taking down of matches, unlocking of safety-lamps, and smoking in fiery mines are causes likely to lead to serious explosions, and may have done so; and if he considers the persons guilty of such offences should be defended at the expense of the great body of the workmen, the majority of whom it may be fairly assumed, are desirous of doing all they can to ensure the safety of themselves and their co-workers as well.

PLATES FOR ARMOUR CLADS.

Not only in Sheffield but in Manchester as well are the efforts of our most skilful workers in steel and iron being put forth for the purpose of producing plates of greater resisting power than any hitherto made for either English or Italian ironclads. The heaviest iron plates yet rolled are incapable of resisting ordinary projectiles, such as the Palliser shot. Plates of iron thicker than any yet made could be produced, but the adoption of them would cause a much greater displacement than is considered desirable, whilst they would also tend to diminish the speed of the vessels. Not only so, but it has been found by the many experiments made that solid iron plates with teak backing, or double plates with teak between them, are no matches for the guns now being made, so that our own Government some time since came to the conclusion that plates of a different character and material to those with which our ironclads have been sheathed should be adopted in the Navy, so as to ensure much greater tenacity, with a less weight of metal. The Lords Commissioners of the Admiralty consequently held out inducements to metal rollers to send plates to Portsmouth for the purpose of being tested as to their resisting power; so far, only three firms appears to have entered the lists—Sir J. BROWN and Co., Sir J. WHITWORTH, and Messrs. CAMMELL and Co.—but it is pected that others will yet enter into the competition, which we understand is open to all comers. The firms we have named at once commenced operations for obtaining a high quality of steel, a plate of which was to be fixed on one of iron, the latter being the back one. As we noticed at the time, each of the firms sent plates to Portsmouth, that on their being subjected to the ordinary test they gave, and were shattered. Nothing daunted, the makers returned to the charge, and new combinations having been formed, further experiments were made, when the palm was awarded to the Whitworth plates, which exhibited the greatest resisting power, and were not penetrated. Unlike the other combined plates, the Whitworth was studded with intensely hardened steel plugs or rivets of great strength. Such plates, however, as might be expected, would be very expensive, far more so than those made simply of iron and steel. Consequently, if as great a resisting power can be obtained from the less expensive plates then, of course, they will be adopted. This it appears is likely to be accomplished from what has recently taken place, for a few days since for the third time we believe some of the combined Sheffield plates of CAMMELL and Co. were again tested at Portsmouth, and with more satisfactory results. Although the plates—5½ in. of iron and 3½ in. of steel—were penetrated to within about an inch of the entire thickness, and considerably damaged, yet they were a great improvement on those previously tested, and could not be said to be unsuccessful. The trial, however, showed that our Sheffield makers are on the right track, so that there is every reason to believe that plates will ultimately be made such as will fully meet the requirements of the Admiralty. The day for iron plates for English war vessels has evidently passed away, and it looks as if in the future we shall have steel-clad ships long before other Governments. Steel, it may be said, can be made of varied qualities, and by elaborate testings and experiments, and combination of ingredients, can be produced of a quality giving much greater resisting power than what is generally made. It is in this direction that the attention of those now engaged in making armour-plates is being chiefly directed, and we expect before long to be able to congratulate some of our leading makers of steel in having been successful in solving a most important problem that will be invaluable to the British Navy, and of benefit to the producers. Iron is fast retreating before the rapid advance of steel, seeing that it has more than twice the tenacity, and many times more durable, and these qualities must ensure a constantly increasing demand for very many purposes for which iron alone was formerly used.

RAILWAY PROSPECTS.

The connection between railway prospects and iron trade prospects is so intimate that we do not think that any apology need be offered by us if we attempt a rapid sketch of the position of the railway interest both at home and abroad. We need not refer in much detail to American railroads, since as we have lost the American iron markets the condition of American lines is a matter of less moment to us. Still, it may be well to note the fact that American railroad traffics, American railroad dividends, and by consequence American railroad credit are all improving. At any rate, this improvement may have the effect of rendering American ironmasters more content with their position at home, and less eager as to the opening out of external markets. The railroad interest of the United States hes been under a cloud—a very black and dismal cloud too—since the autumn of 1873; but light appears to be at last breaking through the cloud, and American railroads are at length beginning to exhibit again something of the marvellous buoyancy and elasticity which they have displayed in former times. At home, again, if we may accept the Stock Exchange for our guide, railway credit, already strong, has become still stronger. In our judgment there has been an undue inflation of prices since it became known that there was no immediate prospect of war with Russia. But even assuming that a reaction should take place, and that the prices of British railway ordinary stocks should recede to a more reasonable level, we are still in presence of the encouraging fact that the credit of our large home railway companies was never so strong as it is at present, and that they can proceed in consequence with any work upon which they may resolve, whether it be sidings, or extensions, or duplications; and all these involve, of course, a certain demand for rails. On the European Continent, again, there is still scope for the further development of railways; and it is a remarkable fact that at the present juncture the Governments of two of the leading States of Europe—France and Italy—are contemplating extensive railway constructive operations. Thus M. DE FREYCINET, the French Minister of Public Works, has drawn up a project for expending in the next ten years 120,000,000*l.* on railway works. The Italian Government has not such large resources at its command as the French Treasury has at its disposal; still, the Italian Government has been discussing the expediency of expending 2,000,000*l.* per annum upon railway works for the next 15 years. Circumstances and conditions such as these must have some effect upon the iron trade of Europe. British ironmasters may not be able to obtain orders of any importance for new French or Italian railways; still, those railways will help to sustain the demand, and by consequence to support the price for iron in Europe; and, *pro tanto*, the result will be beneficial to our iron trade.

It is in the colonial demand for our railway iron that British ironmasters will, in our judgment, find reasons for hope and confidence in the future. Already this colonial demand has very sensibly stimulated the external demand for English rails. Thus, if we compare the deliveries of our rails to British America, British India, and Australasia in the first four months of this year with the corresponding deliveries in the same period of 1877, the results disclosed will be found to be very striking:—

Colony.	1877.		1878.
British America.....Tons	1,452	..... Tons	5,522
British India	21,628	.....	44,236
Australia	19,189	.....	29,594
Total	42,269	.....	79,352

The deliveries will be seen to have nearly doubled this year. In India and Australasia—although the case is, we believe, different in Canada—railway prospects are certainly cheering at present.

NEW EXPLOSIVE.—A successful trial of a new explosive which the inventors—Messrs. Huntley and Kessell, of Cardiff—claim to be in all respects equal, and in some important points superior, to dynamite, was made in the Rhonda Valley on Tuesday. The material very closely resembles, if it be not identical with, lithofracteur; it does not freeze at 32° Fahr., and is, therefore, free from the danger of explosion in the warming-pan, the application of which is in frosty weather often necessary with dynamite. At the Hafod stone quarry a large piece of close-grained conglomerate was operated upon, and it is estimated that 85 tons of rock were displaced with two holes—6 ft. 4 in. and 6 ft. 11 in. respectively—with 3½ lbs. of explosive in each. The next trial was at the Coedcae Company's Woodfield pits, where they are sinking 400 yards down to the steam coal; they are at present down 80 yards or 90 yards. Six holes 2 ft. 6 in. deep were drilled, four in the sump and two in the side. The quantity of explosive used was 5 lbs., it was exploded by electricity, and about 25 tons were removed by the shock. The cost of the explosive will, it is said, be two-thirds that of dynamite, and it is less in bulk. It burns only like damp gunpowder, and can only be exploded with a detonator. It is understood that a company will be formed for developing the invention.

THE APEDALE COLLIERY EXPLOSION.—The exploration of the Burley Pit goes on with scarcely any intermission, but progress is exceedingly slow, owing to the difficult and delicate nature of the work. The heat in the mine is almost overpowering, and the quantity of gas very great, so that the men engaged in the task have to be relieved at short intervals. There is still a considerable amount of work to be done before the explorers can reach the dead bodies—that is, the place in which they are believed to be—and some time is expected to elapse before they are recovered. The men take with them pipes to convey air, and also water pipes, both being highly necessary—the first to supply fresh air, of which there is none left in the workings, and the second for use in case of meeting with fire, as it is supposed to be not unlikely that the fire is not yet extinguished. In fact, the increase of heat with the further penetration of the mine gives colour to the fear that the fire is not out. It will no doubt be several days before any actual results will be attained. In the meantime everything is being done that human skill, or ingenuity, or labour can accomplish to rescue the bodies of the unfortunate men still buried in the mine.

THE INSTITUTION OF CIVIL ENGINEERS.—The council and officers of this institution and of its benevolent fund entertained at dinner, on Saturday evening, at the Albion, Aldersgate-street, Mr. Bateman, F.R.S.S.L. and E., the President, and Mr. Joseph Mitchell and Mr. P. W. Barlow, F.R.S., two out of seven members who have belonged to the society for more than 50 years. The chair was occupied by Mr. W. H. Barlow, F.R.S., the senior vice-president, and there were also present Mr. Harrison, past president; Sir John Hawkshaw, F.R.S., past president; Mr. Manby, F.R.S., honorary secretary; Sir Joseph Bazalgette, C.B.; Dr. Pole, F.R.S.; Mr. Abernethy, vice-president; Mr. T. H. Wyatt, Mr. E. Woods, Mr. W. Baker, Sir W. G. Armstrong, C.B., F.R.S., vice-president; Mr. Jas. Forrest, secretary; Mr. Brunlees, vice-president; Mr. Stileman, Mr. Bramwell, F.R.S.; Mr. Lyster, Mr. R. Price Williams, Col. Hyde, R.E.; Mr. Hayter, Mr. Rumball, Mr. W. B. Lewis, and Mr. J. S. Hargrove.

EXHIBITION OF GAS APPARATUS.—An exhibition of cooking, boiling, heating, and other apparatus in which gas is used, together with burners, meters, and residual products, was opened in the Town Hall, Birmingham, yesterday, under the auspices of the gas department of the Corporation. The object of the exhibition the committee state is to explain as far as possible the various economic uses to which coal gas may be applied, besides purposes of illumination. The following are the principal awards (silver medals):—Family cooking apparatus of various descriptions—Messrs. T. Wright and Co, Birmingham; Mr. C. Wilson, Leeds; Messrs. Scott, Brown, and Co., West Bromwich. Family cooking apparatus, with supply of hot water for bath and lavatory—Messrs. C. Billing and Co., London. Cooking apparatus for clubs and hotels—Messrs. S. Leoni and Co., London. Workman's stove—Mr. J. E. Priest, Birmingham. Gas fire with least consumption of gas—Mr. E. W. Ball, of Birmingham.

WELSH GOLD.—The quantity of gold raised in Wales appears ot be decidedly on the decline; for the report of Mr. T. F. Evans, the Government Inspector, shows that, whilst in 1875 the produce was 385 ozs., it declined in the following year to 289 ozs., and in 1877 there was a further decline to 183 ozs. In 1875 there were 122 tons of gold quartz raised, but none has been obtained since. Again, 10 tons of auriferous sulphurets were raised in 1875, none in the following year, and less than 3 lbs. in 1877.

BUSH LIFE IN AUSTRALIA.—A large audience assembled at the Lecture Hall, Carter-street, Walworth, on May 30, to listen to a lecture given in connection with the Walworth Mutual Improvement Society, by Mr. W. H. Brook, entitled Bush Life in Australia. The president of the society occupied the chair, and in introducing the lecturer to the audience said Mr Brook's face was not new to them, for a good many of those assembled were present at a previous lecture given by him, entitled a Voyage to Australia, and he was there again at the express invitation of the committee to give them an account of his experience in the colony, which he would illustrate with models he had prepared for that purpose, and from his personal knowledge of Mr. Brook, and his anecdotical powers, he could promise the audience a grand treat. Mr. Brook, on rising, said that in order the more effectually to describe Bush life, he had decided to recount his own adventures in the colony, which, as the most of his time had been spent on the diggings would, he thought, convey to his hearers a better idea of Bush life than he could possibly give them by any other means. The lecturer then proceeded to minutely describe his own life in the colonies, which was a very varied one, and related the circumstances under which he frequently had recourse to London assurance, and was compelled, in fact, to turn his hand to anything, adding as his opinion that mechanics and labourers over in Australia were a great deal better off than those who sought employment as clerks, unless they went out provided with influence of the strongest description. The lecture, which was interspersed with many amusing anecdotes, was listened to with rapt attention and vociferously applauded, and at its close

Mr. Brook invited inspection of his models, and answered several questions which were put to him in reference to them. A vote of thanks to the chairman and lecturer terminated a pleasant evening.

REPORT FROM CORNWALL.

June 6.—There certainly are some small crumbs of comfort this week. For example, sympathising with the general improvement in the aspect of the metal markets, consequent, in part at least, on our congressional prospects, there has been a rise of 1s. in the Tin Standards—the first distinct and definite change for the better that we have had for weeks; and Dolcoath again supplies evidence not merely of its own inexhaustible character, but of the great economical strides which are taking place in mining. The largest quantity of black tin ever raised in a similar period has been sold in the quarter, and although the average price has been 2*l.* 10s. a ton less than in the quarter preceding, there is still a 5s. dividend fairly earned. The labour cost has been reduced between 300*l.* and 400*l.*, and yet 12 tons more of black tin have been raised; and the crucial test of the soundness of the operations is supplied in the fact that there are more than 50 men working in the shafts, so that development is kept ahead of production.

The Beaumont drill is not likely to be employed at Dolcoath yet at any rate. Col. Beaumont charges what the adventurers consider too high a figure, and the Barrow drill is doing excellent work. Sir F. M. Williams, M.P., read a report of the work done by the Beaumont drill at Carn Brea, which is worth quoting. The drill was put to work in the 226 fm. level, and worked there up to the end of December last. Since that time it has been driving in the 213 fm. level. The monthly statements are—

1877.	Fms.	ft.	in.
July 14	12	3	0
August 11	15	4	0
September 8	14	5	6
October 6	12	5	0
November 3	14	1	0
December 1	14	2	0
December 20	8	1	0

1878.	Fms.	ft.	in.
January 26	8	3	6
February 23	20	4	0
March 23	14	2	6
April 20	2	2	0
„ New level	2	2	6

These are remarkable results, but at Dolcoath they are sanguine that when their new machinery is all in place the Barrow will do quite as well, and at a more moderate rate.

The latest attempt to resuscitate the famous Combmartin Silver-Lead Mines has come to grief. There never seems to have been sufficient spirit thrown into the concern, and the brunt has had to be borne by the few instead of the many. It is a pity, for the prospects seemed fair enough, and what has been may yet again be.

A curious instance of the individual vicissitudes of mining has been supplied at Cook's Kitchen. A short time since an old tributer, finding that his pitch was getting done, resolved to try his luck elsewhere; he accordingly started work at the 160, which had not been touched for years, and soon struck a nice bunch of tin in the bottom of the level. A sample has given a produce of 11.

A very valuable paper on "Pumping Machinery" was read by Mr. Husband at the last meeting of the Cornish Mining Institute. He stated that the most important pumping apparatus was the single-acting pumping-engine, and that the great economy in the working of steam machinery throughout the world was due to the constant efforts of Cornish engineers to effect its improvement. The fact was that Cornish engineers had so far perfected the steam-engine and boilers, more than 30 years ago, that little or no improvement had been effected in the economy of steam machinery since that period. At an early date Cornishmen, having to increase the depths of their mines in pursuit of mineral wealth, turned their attention to the improvement of pumping machinery, and constantly encouraged engineers in their endeavours to introduce improvements; hence the engines of Savery and Newcomin were adopted in Cornwall at an early period, and the best steam machinery in use as far back as the commencement of the last century was to be found there. Mr. Husband referred to the great services of the three celebrated Cornish engineers—Hornblower, Woolf, and Trevithick. Hornblower invented the double cylinder or compound engine, and erected one at Tincroft Mine in 1790. Woolf greatly improved the compound engine, used high-pressure steam, and obtained by expansive working an excellent result, and it was the adoption of Woolf and Hornblower's inventions and improvements in the present day that enabled their mercantile marine to become the carriers of a very large portion of the merchandise of the world. It was not an exaggeration to say that had Woolf's plans been adopted in the Royal Navy and the mercantile marine 30 years earlier, millions of pounds sterling would have been saved in fuel, to say nothing of the amount that would have been saved in machinery, and yet the names of these great pioneers were being dropped out of sight. Trevithick was the pioneer in the use of high-pressure non-condensing engines for pumping, locomotive, and a host of other purposes, but for the deep Cornish mines he adopted single cylinder condensing engines to work expansively with high-pressure steam, and this type of engine remained in use at present to the exclusion of almost all others in Cornwall. Remarking upon the duty of pumping-engines, Mr. Husband said Lean's registered reports stated that the duty was gradually improved up to the year 1844; but in Lean's report of March last he found that there were only 14 pumping-engines reported, and that the average duty had fallen to 49,000,000, or about 4½ lbs. of coal effective per hour. This was a serious decline, and merited investigation, and the first step in the investigation should be, in his opinion, to determine how far they were working on the same system as the men of the last generation, and where they differed from it. No doubt pumping-engines were working under more disadvantageous circumstances in Cornwall than formerly, owing to the increased depths of mines requiring additional weight of rods, &c., in the shaft. Moreover, the proportion of diagonal to perpendicular shafts had increased of late years; this involved increased friction underground, but after making due allowance for these unavoidable causes the decline in duty was not nearly accounted for. There remained, therefore, the question as to the quality of coal supplied to the mines, and on this head they had not all the required data for comparison. He believed they could not rival the duty of 1844, but they could and ought to reduce the consumption of coal.

The discussion embraced many practical points. Replying to the Chairman (Dr. Foster) Mr. Husband said he did not favour the use of steel rods, and Dr. Foster strongly advocated the use of surface condensers. Mr. Loam said one of the great difficulties of the day was to give a pumping-engine a fair chance. The fairest test was to state the quantity of water a ton of coals would pump to the adit from a certain depth. Pitwork had a great deal to do with the consumption of coal, the shafts in many cases being far from perpendicular, and the shaftmen not up to the mark as they were 40 years ago. In the consumption of coal two things ought to be considered. The falling off in duty arose in many cases from badly constructed flues and poor boilers, but in others was attributable to the ignorance of those in charge of the engines. Some men with knowledge would effect a saving of 25 per cent. Another matter for consideration was the quality of coal, and a coal merchant of 40 years' experience had told him that the quality had deteriorated in the county. At Dolcoath 4 tons of best coal was used, and whilst there was a saving of 10 cwts. on the duty, there was a loss on cost of 1s. 6d. Still, with all that could be said to the disadvantage of Cornish engines, he was convinced after 40 years' experience that for the economical use of steam they were the best in the world, but the best specimens of the engines were not to be found in the county. Mr. Husband did not believe the falling off was due to the enginemen since they were allowed duty money. The quality of the coal was an important feature, but three things were specially to be considered—superiority of engines, less expansion than formerly, and the required strength. Capt. W. Teague, jun., thought the expansion of engines an error. A fortnight ago he made a trial at Carn Brea with a combined engine. The usual pressure was 45 lbs. to the inch, and he reduced it to 25 lbs. and 30 lbs. The result was a saving of six loads of coal per week. It should not be forgotten that 160 fms. was a deep mine years ago, whereas now they were double that depth. He agreed that surface condensers should be used, but was convinced that low-pressure was the best for boilers with pumping-engines. With rotary-engines high-pressure was the cheapest. There was also much room for improvement in pitwork; for instance, the plunger-pole was too close to the stuffing. If raised a little higher, the packing, in his opinion, would stand a much longer time, and he was in favour of hold-back bobs rather than rolls. Mr. W. H. Rule agreed with Mr. Husband as to the difference gained by efficient enginemen. In West Seton, Harvey's engine showed a duty of 55,000,000, but in 1878 it was raised to 68,000,000, the highest in the neighbourhood. He was convinced that the great fault was the quality of the coal sent into the mine. Capt. Evans remarked that there was a time in Cornwall when the engines worked at as high a pressure as any in the world, but if that were done now he should not like to stay in the engine-houses. Steam, to do its duty, should be 70 lbs. to the inch, but to work to that pressure in Cornwall the engine-houses should cost at least one-third more. There was not a single house in the county that could stand to work at 60 lbs. to the inch. One rap of red-hot steam would knock them all to pieces. The pitmen and shaftmen were as good as they ever were. Capt. Rich agreed with the last speaker as to the engine-houses, and quoted the boilers as also inadequate in strength. Mr. Husband, however, believed the boilers could be strengthened by cross-tubes, and said Capt. Teague's suggestion as to an unequal beam was a good one, but the greatest economy, he was convinced, was in a higher pressure of steam. This brief summary of the discussion will be sufficient to show how thoroughly practical the meeting of the Institute was, and to supply some useful hints.

Returning to that portion of Dr. Foster's report which deals with the question of accidents, we have to note, in the first place, that we are still face to face with many occurrences which may fairly be termed of the preventible character. Nevertheless, and in spite of the increase of fatality as compared with 1876, conditions have so far improved that the death rate from this series of causes has been reduced to that of the metalliferous mines of Northern Germany, though still above Saxony. "But," says Dr. Foster, "whether we shall ever be able on an average of ten years to attain as great a freedom from accidents as in Saxony it is impossible to say, and it certainly cannot be done unless all persons engaged in mining, whether masters or men, are constantly striving to reach so desirable a goal." No less than 45 per cent. of the deaths by accidents in 1877 were caused by falls of ground. Most of these, however, were purely unexpected, and the circumstances, in Dr. Foster's view, fully confirm his opinion that a large proportion of the accidents "occur in the so-called safe places." In only one instance does the Inspector ascribe blame to the agents, and that was at South Crofty, where the men had been warned that the pitch was dangerous. The pitch had not been properly examined after a great fall or run of ground that had taken place, and a strong censure on the agents was appended by the jury to their verdict. Another accident was due purely to the stupidity of the man who was killed, and who selected the most unsafe place he could find to stand in while his son was wedging off a rock. There was only an accident from man-engines, for which no one was to blame except the sufferer. This method of ascending and descending shafts Dr. Foster considers fairly safe. One very peculiar accident was, as Dr. Foster points out, caused by a most unfortunate combination of circumstances. A man was killed by being precipitated to the bottom of an inclined shaft, down which he could by no means have thrown himself. Apart from the fact that the moving cause was the inadvertence of the deceased man, the necessary conditions were so strange that no one could have imagined they would ever be realised. Of the three fatal blasting accidents two occurred with dynamite, and one of these Dr. Foster ascribes to a defect in the material used, the other to the gradual exudation of nitro-glycerine from a cartridge which had been left in a hole for a week.

The accident which caused most discussion was that in which some men were killed at Combellack Mine by an iron water barrel falling upon them. The primary cause of the accident, the fall of the barrel, was purely accidental, but the death of the men was due to the fact of their not being protected by a penthouse. This the Coroner's jury considered culpable neglect, and returned a verdict of "Manslaughter." As shafts are frequently sunk without penthouses the agent was, of course, acquitted, but the Inspector "cannot help wishing that the practice of putting in penthouses was universal."

The non-fatal accidents do not call for special remark, though they were rather more numerous than usual, beyond the fact that carelessness played its part very prominently in their production. It is almost inconceivable that men should use iron bars to ram down gunpowder with, or even to tamp with, in the reckless way that some of them do, and perhaps the wonder rather is that instead of 14 accidents with explosives there were not far more. "The practice of using dynamite and gunpowder together is most reprehensible, and should be strictly prohibited." The one boiler explosion was due to "original malconstruction and wear and tear."

Dr. Foster complains that his more personal or important duties are interfered with by at least a quarter of his time being spent in looking after the fencing of old shafts. It is remarkable that after so long a time so much should remain to be done in this particular, but we can see what the vast extent of the original evil must have been. It seems there are numerous infringements of the Education Act, and notice is given that these shall be dealt with.

Matters at Devon Consols continue very much where they were, with the exception that a meeting has been arranged between Mr. Peter Watson and the representatives of the men. The course of the half-yearly meeting has not at all improved the prospects of an amicable settlement, for the men have not been slack to express their want of confidence in the proposals that have been made for a compromise, and to quote some of the speeches on the side of the directorate as justifying their attitude. There does not seem the slightest prospect of the men giving in to the five-weeks month, nor is there any reason to believe that men will be found in Cornwall to supply their places. On the contrary, the Devon Consols miners have the sympathy, and to an increasing extent the help of their fellows from the Tamar to the Land's End. The organisation for their relief is developing. Many have already left the district, and a large scheme of emigration has been suggested. Regular subscriptions are flowing in not only from the general public and from the miners of different parts of Cornwall, but the miners of Cumberland have come to their aid, and promised monthly subscriptions for six months if required. If the interview with Mr. Watson has no satisfactory issue, many more of the men will leave the neighbourhood at once. Not a few are likely to find occupation in the Redruth district. Meantime matters are assuming rather a serious aspect for the shareholders, for it has been currently reported that the Duke of Bedford is not likely to show any consideration, for the results of a course of action of which he strongly disapproves.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

June 6.—This week full time is being found for the workpeople at the ironworks and at the collieries wherever practicable, in order that they may have a good "reckoning" previous to the commencement of the holidays. Outside the furnace coal collieries only few firms are, however, able to gratify the men in this respect, for the demand is still very limited. The owners of furnace coal pits are in this connection in best case, because the very little work that will be done next week compels the bringing to bank of extra quantities of fuel, so that the blast-furnaces may be kept going. Pig-iron is not in better sale. From 2*l.* 5s. to 3*l.* 15s. is the quotation for forge pigs. All-mine sorts sell at, for cold blast 5*l.*, and for hot blast 4*l.* a ton. Sheets are active in the manufactured iron branch. Bars, alike of the best and inferior descriptions, are in limited demand; 8*l.* 10s. is quoted by a few leading houses for marked sorts, and Round Oak iron is a further 12s. 6d. per ton on, but common qualities are still plentiful at 6*l.*

The improved financial position of the Mines Drainage Commissioners, by reason of the increased borrowing powers conferred upon them by the new Act, is leading some of the colliery owners in the Bilston district to anticipate that vigorous steps will certainly, in a few months time, be in progress to unwater some of the mines now flooded. With a view of preventing the flooding of the mines in the Tipton district, the Commissioners are negociating for the purchase of the large pumping-engine at Deepfields, owned by the Earl of Dudley. It is understood that 8000*l.* is the price asked for it, but, in addition to this amount, some money will be required for the purchase of the underground works connected with the engine.

The directors of the Pelsall Coal and Iron Company (Limited) report that although there has been no loss on the working during the past year yet the fall in the value of stocks, together with the necessary depreciation, and including 500*l.* spent on the blast-furnaces, leaves a deficiency of 349*l.*

On the local stock exchanges the chief feature this week is that the shares of Messrs. John Bagnall and Co. are changing hands; the 10*l.* property has been sold since my last at 1*l.* 12s. 6d., but a level 1*l.* 10s. is now the ruling figure. Other coal and iron properties are pretty much stationary.

In North Staffordshire the colliers are on short time at nearly all the mines, as the demand for fuel is not such as to induce proprietors to increase their output. Prices are very low, and are declining. Stocks of pig-iron are accumulating at the makers' furnaces. Home orders are the mainstay of the manufactured iron trade, but even these are very limited.

Commendable efforts are now being determinedly made by the proprietors of the Apedale Colliery to recover the bodies of the 18 poor fellows which remained in the mine when the pit was sealed down after the late explosion. Four bodies, which were so mutilated that they could not be positively identified, have already been got out. Necessarily the work of exploration goes on very slowly, owing, first, to the danger of explosions from remaining gas; and, second, to the fear of water bursting in upon the explorers.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

June 6.—At the lead mines in the neighbourhood of Wirksworth, Winster, Crich, the Peak, and other districts mining is still quiet, and comparatively little ore is being raised considering the number of mines that are open. The Millstone is still doing well, and reports respecting it are most favourable. The Eyam Company, according to the annual report, has been a losing concern during the past year. The quantity of ore raised during the year was only 270 tons, whilst the cost was 425*l.*, and the amount received for ore 334*l.*; the consequence is that a call of 1*l.* per share will be made. The coal trade in the Chesterfield and other districts has been comparatively quiet of late, whilst prices for some qualities appear to be going down. Not so much has been done with London, where consumers can now purchase lower than during any period of the last six or seven years. Best Silkstones are now delivered as low as from 21s. to 22s. per ton, which cannot leave a large margin of profit to the colliery owners whatever it does to the merchant. Steam coal does not go off so well as it usually does in the early part of June, shipments in particular not having been so active as they generally are at this period of the year. Several pits are still entirely standing, so that a considerable number of miners are either altogether idle or but partially employed. Makers of coke have been doing a steady trade, and if anything there has been a slight improvement in the demand. Pig-iron is now very low, far too low indeed to pay, but production goes on much as usual, whilst a large tonnage of ironstone is brought from other districts, the quantity raised at home being scarcely one-third of what is consumed.

A little more is being done at a few establishments in Sheffield, but no general improvement can be said to have taken place. Most of the mills engaged on ordinary work have been running tolerably well, and some armour plates are being sent away on Government account. Mixed plates of iron and steel are now commanding more than ordinary attention, and it is expected that some will be produced that will satisfy the Admiralty, and maintain the reputation the town has so long enjoyed for plates for our armour-clad vessels of war. No change has taken place with respect to Bessemer, the business doing in rails in particular being as active as ever, but prices have come down to a low point, whilst competition is stronger than it has ever been. Cast steel is still quiet, except for some special brands, some of the leading cutlery firms taking rather larger quantities. Considerable quantities of Belgian girders are being imported, as the makers from various causes are able to sell at a lower price than English manufacturers can produce them. In five cutlery leading houses, such as Rodgers and Sons, Brookes and Crookes, Howsons, and one or two others, have been doing tolerably well of late, although there has been a falling off in the American trade. The business doing in house coal from the South Yorkshire collieries has fallen off considerably, so that owners are now in a worse position than they have been for a long time. Several pits are altogether closed, and if there is not a speedy change for the better others will have to do the same. The colliery owners say that they are keeping their collieries going for the benefit of their workpeople only, for they are making no profit whatever, whilst not a few places are being worked at a loss. The London trade has fallen off considerably, and this is said to be owing to the high rate charged by the Great Northern which gives a great advantage to other districts. Efforts have been made to obtain a reduction of the rate, but they have not been successful, so that in consequence not only colliery owners but the railway company alluded to are losing heavily. The present rate, including City dues, is 8s. 3d. per ton, whilst coal is taken from the Tyne to the Thames as low as 4s. 9d. or 5s. per ton, exclusive of the dues. Steam coal does not go off very well, and at some of the collieries thousands of tons have accumulated. The exports from Grimsby have been considerably less than for the corresponding period last year. Smudge, slack, and other descriptions of inferior quality are difficult to sell. At the Wharncliffe Silkstone Colliery, near Barnsley, the men have received notice to leave their employ, and those who hold houses under the company have also had notice to give them up. It is said that the men have refused a reduction of wages. At the Dodworth Silkstone Colliery the men are still on strike, but there are as many non-Unionists at work as are required by the company.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

June 6.—I would assure Capt. John Roberts, of Llanrwst, at the outset that any remarks I have made concerning D'Eresby Mountain have not been made in a sneering spirit. The words "the result has to be looked for," in my report a fortnight ago, were a misprint for "worked for." I for one am anxious to see some good results attained in that district. I should be glad to receive an order for the inspection of the mine and if the authorities will kindly send one to the Editor for the Correspondent, I will avail myself of it on an early date, and faithfully record the result of my visit, with the Editor's permission, in the Journal. Capt. Roberts will then see that I am not the man who has been coveting mining "grapes" in the Llanrwst district. With lead selling at 8*l.* 10s. a ton, what good thing can be said about lead mines generally? It is a time for entrenchment, for fair prices for proved properties, nothing for unproved properties, careful attention to details, the most perfect machinery and careful letting of bargains to the men, and if the time of depression and low prices leads or forces us into good habits, honest ways, and ordinary business application to mining matters, the result will be a clear gain to the reputation of one of the noblest industries of the kingdom in the future.

I should like, with regard to copper mining, to place a simple problem before the readers of the Journal, who are mathematically inclined—Given, a copper mine whose lode is worth 3 tons of copper per fathom along its entire length. What quantity should be mined monthly in order for the profits of its produce to pay a dividend of 10 per cent. per annum on a capital of 100,000*l.*, the quality of the ore being (say) 7 per cent., and the price per unit 12s. 6d.? The very low price of copper is affecting the low percentaged mines, and I am sorry to record that the plant and machinery of the Alderley Edge Mine, which with better prices was successfully worked, is being sold to-day and to-morrow. This mine was worked in the New Red Sandstone, and its copper deposits, as a cupreous sandstone bed, was analogous to similar deposits, which in time past have been worked at Harmer Hill, and Eardiston in Shropshire. At Harmer Hill platinum is now obtained in small quantities from the same formation.

The uncertainty there has been concerning the probability of war

has somewhat paralysed the slate trade for a time. The quays at the Welsh ports are full of slates, and the ports full of shipping. Among the new companies registered I see that of the Wynne Slate Quarry Company, with a capital of 25,000*l.* for a small quarry that has been worked for a century or more in Glyn Ceiriog, near Llangollen. Legitimate enterprises are often overweighted with purchase-money, and with capital beyond their size and requirements, and this is a matter to which our American cousins are turning their serious attention. "Both they and we, however, seem slow to learn from the mistakes of the past.

I notice Mr. Gray's letter with regard to the new method by which he proposes to deal with the sale of mineral properties. His plan is being tried, I believe, in connection with a lead mine in Cardigan, and among other readers of the Journal I should like to hear of its progress.

Mr. Arnold Lupton, F.G.S., the respected manager of the Bettisfield Colliery, is leaving North Wales to attend to his professional duties at the Yorkshire Mining College. Mr. Lupton is one of the new generation of mining engineers who seek to combine science with practice, and we are sorry to lose him from the Principality.

A sad accident attended by the loss of four lives has been caused by an explosion in the Forsygo pit of the Brynmally Colliery, near Wrexham. A coal 12 yards below the main had recently been won and opened in. On Thursday morning last 20 men went down to their work, having first had their lamps examined and locked by the lampman, and further examined by the fireman. The fireman having discovered a little gas left all the men but two at the bottom of the pit, and taking the two and leaving the lamps on the main road went into the workings to drive out the gas. Notwithstanding these precautions a terrific explosion took place by which two men, Joseph Millington, married, and John Davies, single, were killed on the spot, and two others, David Edwards and Richard Powell, have since died. The other men, some of whom were badly burnt, were rescued from their perilous position

The use of steam on the tramway between Wrexham and Rhos has been sanctioned by Parliament. In the coal trade more business is, perhaps, being done, but at ruinously low prices.

TRADE OF THE TYNE AND WEAR.

June 6.—There is not much new to report in connection with the Coal and Iron Trades. Dulness is still the prevailing characteristic that clings to all branches, with but few exceptions. A fair business continues to be done in the Steam Coal Trade, and the best works are fairly employed. The business done at Tyne Dock varies very little from week to week, the shipments being about 30,000 chaldrons per week. In Durham some of the gas coal works are fairly employed, but most of them are dull, and small and manufacturing coals continue a drug. The Westerton pit, near Bishop Auckland, is to be stopped on account of the dull trade.

The Iron Market at Middlesborough, on Tuesday, was pretty well attended. Business was not brisk, but there was a better feeling apparent, and makers were inclined to be stiffer in their quotations. The chief producers are asking about 39s. for No. 3 and 37s. for No. 4 forge, less commission. The buyers do not, as a rule, give these figures, but state that they are able to obtain iron at about 38s. 6d. for No. 3, and 37s. 6d. for No. 4 forge. There is a lack of animation in the Manufactured Iron Trade, as this class of trade has not as yet felt any improvement from the better political situation, and it will, probably, take some time before it can do so. The political barometer does not produce such an immediate effect either one way or the other in a more settled and less speculative class of trade, such as that in finished iron, in which speculation of the same order as in pig-iron cannot exist. The plate makers are still busy, and arrangements are being made for adding to this class of work. It is hoped that the enterprise thus shown will be justified by events. At present there is a quieter demand for shipbuilding material, as orders for new vessels do not seem very plentiful. An early peace may, however, give a very considerable impetus to trade. Bars and angles are also quiet. Ship plates are standing at 6*l.* 2s. 6d; common bars, 5*l.* 10s.; angles, 5*l.* 12s. 6d. to 5*l.* 15s.; boiler-plates, 7*l.* 2s. 6d. to 7*l.* 7s. 6d. The demand for puddled bars is limited, at about 3*l.* 15s.

It appears that the Godfrey and Howson furnace is an instrument likely to effect a great advance in the system of manufacturing finished iron. Experiments have been made at Middlesborough which tend to show that puddled bars can be produced at considerably less cost than by the ordinary method; while, as regards quality, all difficulty seems to have been overcome. Samples of steel manufactured from this furnace are now in the Paris Exhibition, and are made entirely from Cleveland brands of pig-iron, and new features have since been introduced into the process, but it remains to be proved how far it will be able to stand the severe competition of the Bessemer converter.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

June 6.—Early this morning a terrible explosion of coal-gas occurred on board the steamer Cryoslite, of Liverpool, while lying in the Alexandra Dock, Newport. She belongs to a Liverpool firm, and had been laden with coal from the Newport Abercarn Colliery for Lisbon. Her bunkers were being filled with coal, and she was to start the same morning. Suddenly an explosion occurred, and the ship caught fire. Four men were killed, and seven or eight injured. The explosion is said to be due to the incautious ignition of a match by the watchman. The matter will be thoroughly investigated at the inquest.

Apropos of the Newport Abercarn coal, I find that the company are gradually increasing their operations. They only commenced winding coal at the beginning of the year, yet one day last week 1000 tons were raised; and this amount, it is hoped, will shortly reach to something like 1200 per diem.

Last week a shocking accident happened at the Gelly Colliery, in the Rhondda Valley. Several men were engaged in sinking operations at the bottom of the shaft, when the rope to which was suspended a bucket full of rubbish broke, and descending killed two of the men.

Petitions in favour of the Pontypridd, Caerphilly, and Newport Railway Bill have been adopted for presentation to the House of Lords by the Newport Chamber of Commerce and the Town Council. Mr. J. C. Parkinson, Chairman of the Alexandra (Newport) Docks Company, has been appointed President of the Local Chamber of Commerce.

By the opening of the new railway line from Kidderminster to Bewdley the journey of passengers from Birmingham and the Midland Counties to South and Mid-Wales will be much shortened. No doubt as the London and North-Western have running powers over the line a large number of mineral trains will travel by this route to Birmingham and the Midland Counties.

Another meeting of the Great Western Colliery Company has been held at Bristol, when a reconstruction scheme was resolved on, subject to the approval of the Court of Chancery. It was stated that since the beginning of the year the concern had been paying its way, and, moreover, making a small profit.

A meeting of miners' delegates for this district has been held at Aberdare. So far as the Blaenclydach strike is concerned, it was resolved to recommend every colliery to uphold the men on strike. The appointment of a member of the sliding scale committee, vacant by the resignation of Mr. David Morgan, Mountain Ash, was deferred for three weeks, as it is uncertain whether Mr. Halliday will also resign.

A special meeting of the Mwyndy Iron Ore Company has been held for the purpose of increasing the borrowing powers from 10,000*l.* to 25,000*l.* Through the depression in trade, said Mr. A. Brogden, M.P., who presided, stocks of ore had accumulated in the Mwyndy Mine. The expenditure on the Trecastle and Llwynsaer properties —now in good working order—had caused them to be out of funds. It was resolved to carry out the object of the meeting. A proposal to wind up the company did not meet with acceptance.

To turn to the Iron Trade, although evidences of great depression are to be observed on all hands, yet there are signs that at two or three of the large works there is more business in hand. At Dowlais, Ebbw Vale, and Rhymney a mill has been started, and some decent orders are here in hand. At the same time prices continue very low, and, so far as can be at present seen, there is no prospect of any improvement in this direction. The demand for rails is the reverse of brisk, while that for bars, principally on foreign account, is very limited Pig-iron stocks are not quite so large at some of the works. It is manifest, however, that in the finished branches, particularly bars, the Belgians are injuring our trade, and will do so while they can undersell us, for buyers naturally go to the cheapest market. The Bessemer steelworks are fairly active, but at the Landore Steel (Siemens's) Works business is not brisk. A slight improvement may be reported as having taken place in the Tin-Plate Trade, consequent on the recent decision of the makers. Prices are stiffening, and show slight rise.

The Coal Trade remains as before, although clearances foreign have not been quite so brisk. The demand for steam qualities has, however, been kept up to the average, but so far from prices improving, they show no change, except that they are not quite so settled. As a rule, the pits are a little better employed. The house coal trade is dull, and so is the gas coal department. Patent fuel, however, is in a little better request; and maintains the slight improvement previously noticed.

The manager and one of the proprietors of the Llanfirnach Lead Mines, Pembrokeshire, were fined by the Pontreselly magistrates, on Tuesday, a sum of 2*l.* 10s., for having caused the polution of the River Taff, by allowing poisonous water to run into the stream.

A HANDBOOK OF GOLD AND SILVER.

The currency question is one upon which the number of those who write upon it is immensely large, whilst the number of those who understand it is infinitesimally small, and it must be acknowledged that it is much easier to demonstrate that any given proposition would inevitably fail in practice than to discover a scheme which does not create greater evils than it proposes to remove. It does not follow in the case of the currency question that because scheme No. 2 is exactly opposite to scheme No. 1, which is universally admitted to be almost as bad as possible, that scheme No. 2 is practicable. It is rather like the betting transactions of the public with the book-makers, which, as a recent writer explained, is as a matter of course productive of results adverse to the public, who, however, are not content with this ordinary process of losing their money, but very frequently bet in such a manner that they must inevitably lose something whatever horse wins, the only difference which the result of the race makes to them being that it determines whether their loss shall be large or small. "An Indian Official" has now published a "Handbook of Gold and Silver" (London: Longmans, Green, and Co.) in the shape of a handsome volume of nearly 400 pages, and which is intended to settle the entire question upon a satisfactory basis. The author believes the silver difficulty and the universal depression of trade are but symptoms of the same economic disorder. He thinks, too, that there exists a crisis which requires wise and prompt treatment, and displays some ability as a crisis-treater, remarking that statesmen resign their duty to political economists, who love abstract reasoning and to theorise; and to brilliant journalists, no doubt intending to be cruel to Cernuschi, who excel in discussing the events of the everyday life of nations, but who have not the time, opportunity, or the commonplace power of drudgery for digging out the facts which must guide correct opinions of what the silver question means, and the universal depression of trade implies.

It is scarcely worth while to combat "An Indian Official's" opinion that gentlemen of his class have so great an abundance of leisure time that they necessarily possess greater facilities for studying currency subjects than mere journalists, such as Cernuschi, Delaveleye, and others of their class, who may be said to make a business of the subjects upon which they write, and which have secured them the great names and reputations which they at present enjoy. This very Cernuschi is he whose memoirs on bi-metallic currency has been recognised by many of the leading statesmen in every country as the most complete and practical which have been written; and he who, referring to the wise step taken by the American Congress, has recently given in the Siecle an admirable review of the history of mono-metallism, and demonstrated that no good has come from it and no good is in it. Cernuschi says that the German Government has lost 100,000,000 francs by its demonetisation of silver, and now has 400,000,000 silver marks in circulation, which are money only in Germany. Outside Germany they are depreciated 15 or 20 per cent. There are over 2,000,000,000 silver five-franc pieces in France which are at present as good as gold in France (and he might have added in Belgium, Switzerland, Holland, and Italy also), but which would rapidly depreciate if France from any cause became a debtor nation. "An Indian Officer" proposes for India that same demonetisation of silver which has cost Germany 4,000,000*l.* to effect, whilst Germany's stupidity in not availing herself of the opportunity of adopting the "franc" as a standard has made her silver coinage worthless out of Germany, and subjected all those who are unfortunate enough to accept her gold coin to the same inconvenience as existed when each petty German State had its own currency. The Indian conversion would be equally costly and equally useless.

What is really required is an exact correspondence of currency in order to facilitate commercial dealings, but this is not part of the question which "An Indian Officer" discusses or refers to, except by such indirect suggestions as that "Bank of England notes, against which gold is deposited in London, could be declared legal tender in India." It might even be doubted whether "An Indian Officer" has really any fixed idea whatever on the subject about which he writes, for although he condemns bi-metallism he virtually accepts the principle of bi-metallism as a necessity, for he states that "the demonetisation of silver does not imply its disuse as currency. It would still be employed as subsidiary currency, perhaps on an enlarged scale, and with an enlarged limit for subsidiary silver coin as legal tender. Coupled with the condition of its receipt to any amount in payment of Government dues, the silver currency, within its own special range—the mass of inland or domestic transactions—would be just as efficient as gold." This denuded of verbiage means either that the Government shall be compelled to receive as legal tender silver (as well as gold) in unlimited quantities, and at the same time be prohibited from so paying it as legal tender, or it means nothing. In other words, it makes bi-metallism compulsory on the Government at the option of the public, and restricts the Government to all the evils of mono-metallism. Cernuschi very properly gives the American Congress credit for having discovered the evil tendencies of monometallism and broken away from European leadership on that point, for he remarks that "the United States have discovered that the silver from their mines had no longer a market in Europe, or even at home; they have discovered that there is not enough gold in the world to replace the old silver circulating in Europe, Asia, and South America; they have discovered that, if they remain the slaves of monometallism, they will never be able to resume specie payments; they have discovered that, with all its triumphs and all its pride, monometallism is always impotent, always unrealisable, always disastrous and anti-human. Thereupon, shaking off the dust of prejudice, the American Congress has risen and the Bland bill has become law."

The amount of information brought together by "An Indian Officer" is enormous, whilst its condensed form offers the utmost possible facility for considering the statements in detail, and drawing conclusions from them. The volume is well worth reading even by those who cannot bring themselves to entertain the views of the author.

PHENOMENA CONNECTED WITH MINERAL DEPOSITS.—A useful little pamphlet, the object of which is to suggest to students visiting mines, and to those actually resident at mines, a series of points worthy of investigation, has just been compiled by Prof. JOHN MILNE, of the Japanese Imperial College of Engineering, at Tokio, and furnishes a practically valuable abstract of many of the more important portions of Von Cotta's Treatise on Ore Deposits, Lottner and Serlo's Bergbaukunde, Prof. Warington Smyth's Lectures on Mining, Henwood's Treatise on Metalliferous Deposits and Subterranean Temperature, and De la Beche's Reports on the Geology of Cornwall. Prof. Milne remarks that it often happens that students visiting mines omit to gather all the information which they have good opportunities for obtaining, merely from the want of a proper system of enquiry and of collecting facts, a misfortune which is the more observable when the visits are short. Professor Milne's notes are intended to indicate the leading points to be observed, and although these are generally such as have been examined into and verified for European and other districts, if they be carefully recorded they will be useful and interesting as showing how far the phenomena connected with the mineral deposits of Japan may accord with or vary from those of other countries. First, with regard to the classification of mineral deposits, he shows that they are divided into regular and irregular deposits; and then gives a brief outline of the nature and characteristics of true veins, transverse to the stratification of the beds in which they occur; bedded veins, parallel to the stratification; and contact veins, or veins at the contact of two dissimilar formations; he mentions that belonging to these three divisions, but named according to some peculiarity of their form or position, are gash veins, lenticular veins, cross-courses, cross-veins, flookans, &c. The second branch of regular deposits—beds and layers—is then referred to; and the character of irregular deposits having been described, Prof. Milne adds some incidental observations, which will afford some good hints to the student. He attaches considerable importance to the study of the temperature of mineral veins, and refers to the researches of Jory Henwood, Fox and others, and adds that the electrical phenomena of mines would also form an interesting study. When, he says, we fully understand all the changes in terrestrial phenomena which are due to the neighbourhood of metallic deposits we may be able to apply them in discovering lodes from the surface of the ground and in tracing the positions of the richer parts of the lodes which are already being worked.

MANUFACTURE OF VIGORITE.

The profitable nature of the business in the recently introduced strong explosives has frequently been noticed, and it can scarcely be doubted that the more the miners become accustomed to their use the greater will be the demand for them. Within the last few years a small undertaking known as the "Vigorite Company" has been carrying on business at Haslum, near Christiania, in Norway, but the amount of capital at disposal being very limited, the occurrence of a comparatively small explosion which destroyed the oil-house has resulted in the dissolution of the partnership, and the placing of the manufactory in the market. Vigorite is an explosive matter with which the company intended to compete with dynamite, but after the explosion in question it was decided to give up the business. All the manufacturing buildings are situated near to each other, and well protected by mounds of earth and natural rock, so that the explosion of the oil-house did not damage any of the other buildings; the store-house and dwelling-houses are also in good condition, so that the manufacture can be resumed as soon as the oil-house be rebuilt. The property is admirably situated, and many difficulties have had to be surmounted to obtain a license from the Government to manufacture explosive matters upon it; indeed, about two years was occupied in procuring the concession, and it is considered probable that no more similar privileges will be granted, as the law respecting such establishments is very rigorous, owing to the fear of explosions entertained by the public.

With regard to the business in dynamite carried on in Norway and Sweden, it is stated to be good and profitable. In Norway there is only one dynamite factory to supply the market; it is situated about 20 miles from Christiania, but this is a comparatively large one. There is a small establishment on the western coast, near Bergen, but it only manufactures for a few neighbouring mines belonging to some of the shareholders and for one railway contractor. And even if any attempt were made to extend the business the works on account of their remote situation will never be able to compete. In Sweden there is only one dynamite factory, though there are two others making Sebastin and Petrolit respectively, both of which are nitroglycerine compounds, but it is confidently felt that there is ample room for the Haslum factory, which might be entered upon with good prospects of commercial success.

MULTIPLE DRILLS.—In constructing a multiple drill Messrs. DRYSDALE, BAYNES, VOSPER, and SNAWDON, of Plymouth, propose to mount the spindles which are to carry the drills side by side parallel one with the other in a suitable frame. At one end of the spindles are sockets for receiving the stems of the drills, and at their opposite ends are crank arms inclined to the spindles, and all inclined in the same direction. The crank pins at the ends of these arms are parallel with the spindles, and enter holes in a disc or piece, which has motion given to it by a crank, or cranks, in a circular path, without rotating. A single crank is by preference used, and its crank pin works in a hole in the plate or piece. By this means, when a rotating movement is given to the driving crank, a corresponding movement is given to all of the drill spindles; and by reason of the crank arms of the drill spindles being inclined as described, the drill spindles may be placed in close proximity to one another, and have the throws of their crank arms greater than the distance between the spindles. The frame is formed with a slot or opening at its centre, the drill spindles are mounted in the frame at one side of this opening, and the shaft of the driving crank on the opposite side. The several crank arms are on the ends of the spindles within the opening in the frame; the sockets for receiving the drills are on the outer ends of the drill spindles, whilst on the outer end of the driving spindle are fast and loose pulleys, to allow of this spindle being driven by a driving belt. Eccentrics might be used in place of cranks. The means above described for transmitting motion from one spindle to a number of other spindles in proximity to one another may be applied in other cases where it is desired to give a revolving or oscillating movement to two or more spindles.

TREATING ORES.—The invention of Messrs. DROUIN and DE BAXERES DE TORRES, of Madrid, has for its object the more economical recovery of silver and copper from all minerals or ores containing the same, and consists in reducing such ores to powder, and in the addition of such pulverised mineral or ore of an acidulated solution, either hot or cold, of marine salt, in order to obtain the chlorides of such metals. Also in the use of binoxide of manganese, with the object of facilitating the dissolution of the chloride of silver. The quantities of materials composing the solution will vary with the quantity and richness of the ores treated. As an example, to 5 lbs. of pulverised ore containing (say) 5 per cent. of metal add a solution of (say) 2 ozs. of marine salt to 10 drops of nitric acid in four gallons of water, and for facilitating the dissolution of the chloride of silver 1-10th of an once of the binoxide of manganese. The whole process will occupy 12 to 24 hours, and can be performed by crushed the ore in any convenient stamping machine, and then treating the ores as above described in a cask or casks, with double sides and bottoms covered with cloth, which serves as a filter. The pulverised ore is placed in the inner and upper part of the cask, where it is held in suspension in the solution, and stirred therein by hand or machinery. It is sometimes convenient to add water to the solution, especially if the metal is mixed with tenacious earths or matters, also to vary the proportions given above.

PUMPS.—Some improvements in the construction of hydraulic and air pumps, in which the sucking and forcing action is derived from the alternate compression and expansion of elastic tubes, have been invented by Mr. FRANCOIS BRUYAS, of Paris. The pump consists of a body or framework, which may be formed of one or more sections of a metal pipe of any required calibre; within this there is a double cross piece, in the centre of which is mounted the driving shaft carrying an adjustable arm terminated by bearings of the revolving runner; a tube of caoutchouc or other suitable elastic and compressible material, of any required calibre, is coiled inside the frame, from which its extremities egress in opposite directions through openings; a handle is keyed to the end of the shaft, and may be replaced by a fly-wheel or other equivalent. In the rotation of the shaft the runner in its passage round the circular body compresses the tube against the plane surface of the latter, thus giving rise to suction through the end of the pipe immersed in the fluid, and to forcing through the opposite or outlet extremity. The form, dimensions, and general details of this apparatus may be varied according to circumstances.

GREAT WHEAL RODD.—It will be gratifying to those interested in the development of the mineral resources of the district in which this mine is situated to learn that the mundic is found to contain from 7 ozs. to 12 ozs. of silver to the ton, and is being saved for a separate parcel. A general improvement has also taken place in the prospects of the mines.

PENSTRUTHAL.—There is a good improvement in the shaft at this mine. The lode is now 4 ft. wide, with more still standing to the north; and in the last 2 ft. there has been a decided improvement in its character, being more mineralised. An assay made from one part made 600 of tin to the ton of stuff. The water is increasing in sinking, and the agent thinks that there can be no doubt but they are nearing a good productive lode. The shaft is at present going down under the elvan course passed through above. Over the elvan it was devoid of much water, but the occurrence of much water now shows a capacity for mineral deposits on a large scale. Under similar circumstances in the Gwennap district these champion lodes turn out very prolific in a few fathoms below the elvan.

The directors of the National Provincial Bank of England have announced a half-yearly dividend at the rate of 8 per cent. per annum, and a half-yearly bonus of 7 per cent., payable on the bank stock on and after July 8.

ROCK-BORING MACHINERY REQUIRED.

THE DIRECTORS of DEVON GREAT CONSOLS COMPANY (LIMITED) SOLICIT FULL PARTICULARS from the MANUFACTURERS of ROCK-BORING MACHINERY, &c., for SINKING, DRIVING, or STOPING at the company's mines.

The particulars to be sent to ALEXANDER ALLEN, Esq., Secretary, The Devon Great Consols Company (Limited), 134, Gresham House, Old Broad-street, London, E.C.

TO BE SOLD, OR LET, SEVERAL VALUABLE GOLD MINES, in the neighbourhood of the ST. JOHN DEL REY MINES, BRAZIL.
Apply to Mr. T. C. KITTO, 5, Ferris Town, Truro.

TO BE LET, at very low rentals, TWO WAREHOUSES, in SUFFOLK GROVE, GRAVEL LANE, about 2500 ft. super. each, and a small SMITH SHOP, the whole having been put into thorough repair. Also, at Glengall Grove, Old Kent-road, near the Lord Nelson Tavern, a large covered WORK-SHOP, area with land adjoining 35,000 super.; four chimney shafts, fitted office, and three entrance gates—this could be divided. Also, TWO WAREHOUSES, of two floors each, 40 ft. by 30 ft.; area with land adjoining 9000 ft. super. The land could be increased or reduced. The use of a wharf could be had, if required. Alterations would be made in these premises to suit tenants.
Enquire, Mr. E. REDDIN, The Grove, Southwark-street, S.E.

WANTED, a RE-ENGAGEMENT as AGENT or MANAGER, ANALYST, ASSAYER, and SURVEYOR. Has had the management of Mines at home and abroad.
Address, "Z.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

WANTED, for an Island in the West Indies, a GOOD WORKING BLACKSMITH, capable of repairing small engines and making himself useful. Wages liberal, and everything found.
Apply, with testimonials, by letter, to the New Sombrero Phosphate Company (Limited), 1, Leadenhall-street, London.

WANTED, by Advertiser, aged 25, a SITUATION as ACCOUNTANT to MINES. Has held similar appointments, and can be well recommended.
Address, "K 372," care of Henry Greenwood, Advertising Agent, Liverpool.

A GENTLEMAN SEEKS EMPLOYMENT who studied Mining and Metallurgy in all its various branches, and has since had several years experience. Highest testimonials, &c.
Address, "Freiberger," Post-Office, St. Day, Cornwall.

A BONUS of £15 WILL BE GIVEN to any Gentleman who places 100 Shares in a good LEAD MINE in a fortnight.
Particulars from "Zeta," care of Mr. Rutter, 5, Pyne's-terrace, St. David's, Exeter.

NATIONAL PROVINCIAL BANK OF ENGLAND, BISHOPSGATE STREET.
Corner of Threadneedle-street, London, E.C., June 4th, 1878.

The Directors of the National Provincial Bank of England hereby give notice that a HALF-YEARLY DIVIDEND at the rate of EIGHT PER CENT. PER ANNUM, and a HALF-YEARLY BONUS of SEVEN PER CENT. will be PAYABLE on the bank's stock on and after the 8th day of July next, when the dividend and bonus warrants may be obtained at the Bank, No. 112, Bishopsgate-street (corner of Threadneedle-street), or at the different branches.

The Transfer-books will be closed on and after Saturday, the 8th instant, until the dividend and bonus become payable.

By order of the Court of Directors,
W. HOLT, R. FERGUSSON, T. G. ROBINSON, } Joint General Managers.

RICHMOND CONSOLIDATED MINING COMPANY (LIMITED).

Notice is hereby given, that the ORDINARY GENERAL MEETING of the shareholders of the Richmond Consolidated Mining Company (Limited) will be HELD at the City Terminus Hotel, Cannon-street, London, on TUESDAY, the 18th day of June instant, at Twelve o'clock at noon, to receive the report of the directors and the statement of accounts from the 30th April, 1877, to 28th February, 1878, and to transact the general business of the company.

And notice is hereby further given, that an EXTRAORDINARY GENERAL MEETING of the shareholders in the said Company (Limited) will be also HELD at the place aforesaid on the same 18th day of June, at One o'clock in the afternoon, or as soon thereafter as the business of the said Ordinary General Meeting is concluded; and the object of such Extraordinary General Meeting is to receive and take into consideration the report of the committee appointed by the Extraordinary General Meeting of the shareholders on the 23rd day of August, 1877, and to adopt, if deemed expedient, such of the recommendations contained in the report of the committee (a print whereof has been circulated among the shareholders) as the Extraordinary General Meeting of shareholders, of which notice is hereby given, may approve.

By order of the Board,
HUBERT AKERS, Secretary pro tem.
44, Coleman-street, E.C., 4th June, 1878.

THE BIRMINGHAM WAGON COMPANY (LIMITED)

MANUFACTURE RAILWAY CARRIAGES and WAGONS of EVERY DESCRIPTION, for HIRE and SALE, by immediate or deferred payments. They have also wagons for hire capable of carrying 6, 8, and 10 tons, part of which are constructed specially for shipping purposes. Wagons in working order maintained by contract. MANUFACTURERS also of IRONWORK, WHEELS, and AXLES.
EDMUND FOWLER, Managing Director.
WAGON WORKS,—SMETHWICK, BIRMINGHAM.

GLASGOW AND THE HIGHLANDS.

ROYAL ROUTE VIA CRINAN AND CALEDONIAN CANALS by the new steamer "COLUMBA," or the "IONA," from GLASGOW DAILY at 7 A.M., and from GREENOCK at 9 A.M., conveying passengers for NORTH and WEST HIGHLANDS. See bill, with map and tourist fares, free, at Messrs. CHATTO and WINDUS, Publishers, 74, Piccadilly, London; or by post from DAVID HUTCHESON and Co., 119, Hope-street, Glasgow.

J. J. ARIS AND CO.,
MINING ENGINEERS, MINERAL AND METAL MERCHANTS,
29, FENCHURCH STREET, LONDON, E.C.
Mines inspected and reported upon.

COPPER ORES.

Sampled May 22, and sold at Tabb's Hotel, Redruth, June 6.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Mellanear	75	£2 17 6	East Pool	25	£6 13 6
ditto	70	2 17 6	West Seton	74	3 19 6
ditto	67	2 16 6	ditto	48	4 0 0
ditto	66	3 11 6	ditto	47	3 4 6
ditto	62	2 18 0	ditto	42	4 0 6
ditto	50	2 0 6	South Crofty	73	2 12 6
West Tolgus	68	5 8 6	ditto	54	1 16 6
ditto	60	5 2 0	Wheal Basset	43	4 11 0
ditto	58	7 8 6	Carn Brea	24	1 15 6
ditto	55	6 14 6	ditto	16	3 14 6
ditto	43	3 0 0	West Basset	25	3 4 0
ditto	42	5 17 6	North Treskerby	25	4 3 6
East Pool	75	3 13 6	Penstruthal	13	2 15 0
ditto	74	3 5 0	Thomas's Ore	3	2 17 6
ditto	58	2 0 6			

TOTAL PRODUCE.

Mellanear	390	£1123	3	0	Carn Brea	40	£102 4 0
West Tolgus	324	1836	6	6	West Basset	25	80 0 0
East Pool	232	800	9	0	North Treskerby	25	104 7 6
West Seton	211	806	15	6	Penstruthal	13	35 15 0
South Crofty	127	290	3	6	Thomas's Ore	3	8 12 6
Wheal Basset	43	195	13	0			

Average standard ..... £ 87 13 0 | Average produce 7⅞
Average price per ton £3 15 0
Quantity of ore ..... 1433 | Quantity of fine copper 106 tons 7 cwts.
Amount of money £5383 9 6
LAST SALE.—Average standard ..... £ 87 13 0 | Average produce 6⅝
Standard of corresponding sale last month, £ 83 2 0—Produce, 7¾

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
Vivian and Sons	385½	£1209 17 9
Grenfell and Sons	317	1723 6 6
Nevill, Druce, and Co.	201½	614 19 6
Williams, Foster, and Co.	325½	1142 0 9
Mason and Elkington	203½	692 5 9
Total	1433	£5383 9 6

NO SALE on Thursday next, June 13.

Copper ores for sale at the Royal Hotel, Truro, on Thursday week—Mines and parcels.—South Caradon 480—Marke Valley 315—Glasgow Caradon 280—Hingston Down 150—Gawton 150—Wheal Crebor 145—Bedford United 126—West Maria and Fortescue 55—East Caradon 50—Great Crinnis and Carlyon 41.—Total, 1742 tons.

WEST ROSKEAR.—The lode in the 12 west has considerably improved during the past week, and is now worth fully 20*l.* per fm. The general character of the lode and surrounding stratum warrants the expectation of an important discovery of minerals at the next level—the 24.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the WHEAL WREY, LUDCOTT, AND NORTH TRELAWNY MINING COMPANY (LIMITED).—By the direction of His Honor the Vice Warden, notice is hereby given that, on Monday, the 24th day of June instant, at Eleven o'clock in the forenoon, at the Registrar's Office, at Truro, in the county of Cornwall, this Court will PROCEED to MAKE a CALL of THREE SHILLINGS AND FOUR PENCE PER SHARE on all the Contributories of the said company who are liable to pay TEN SHILLINGS per share in respect of the shares for which they were settled on the List of Contributories of the above-named company as present members thereof. All persons interested therein are entitled to attend at the time and place aforesaid to offer objections to such call.
JOHN HENRY HAMLEY, Official Liquidator.
Dated Stannaries Court Office, Truro, 4th June, 1878.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the ALVIGGAN AND BURNGULLOW TIN MINING COMPANY (LIMITED).—TO BE SOLD, under the direction of the Registrar of the said Court, on Thursday, the 20th day of June instant, at Eleven o'clock in the forenoon, at the ALVIGGAN AND BURNGULLOW MINES, in the parishes of St. Stephens-in-Branwell and St. Mewan, within the said Stannaries, in One or more Lot or Lots, and subject to such conditions as shall be then and there stated and produced, all that the INTEREST of the said company of and in the SETTS under which its mining operations have been carried on, together with the WHOLE of the

MINING PLANT, MACHINERY, MATERIALS, AND EFFECTS

Belonging to the said company, and being within and upon the said mine and elsewhere, within the said Stannaries, and comprising at the said Mine—

ONE 32 in. cylinder ENGINE, with 20 ft. fly-wheel.
ONE 10 ton BOILER, 11 fms. of 10 in pumps, doorpiece, clack, balance-bob and gear, hand pump, horse whim, flat rods, crab winch and chain, two windlasses, double and treble pulley blocks, spanners, iron stairs and rail, several fathoms of launders and ladders, a large quantity of new and other timber, and a quantity of other materials and effects in general use in mines. Also several tons of tinstone.

At the Burngollow Station of the Cornwall Railway, 18 14 in. pumps, one windbore, H piece, and triangle.

And at East Phœnix Mine, in the parish of Linkinhorne, two stamps axles and 24 heads, &c.

To inspect the above, apply to the Bailiff in charge at the mines, and for further particulars to Mr. CHARLES WILLIAM CLINTON, the Official Liquidator of the said company, at the Stannaries Court Office, in Truro.

R. M. PAUL, Truro, Solicitor for the said Official Liquidator.
Dated 6th June, 1878.

VALUABLE MINING MACHINERY AND PLANT AT THE OLD TREBURGETT MINE, ST. TEATH, near CAMELFORD, CORNWALL, FOR SALE.

MR. POLLARD has been instructed TO SELL, BY AUCTION, on the above named Mine, on Tuesday, the 18th of June next, and following day if required, commencing at noon, subject to such conditions as shall be then and there read, the WHOLE of the

MACHINERY, PLANT, AND OTHER EFFECTS

Thereon, comprising—

ONE good 50 in. PUMPING ENGINE, 10 ft. stroke in house, and 9 ft. in shaft.
THREE 10 ton BOILERS, with fittings.
ONE 22 in. DRAWING ENGINE, with drawing gear, crusher, and jigging gear attached.
ONE 11 ton WEIGHBRIDGE, by Bartlett and Sons; plunger lifts, pumps, balance bob, several jigging machines with gear attached, water wheels, whims, tram wagons with rails, wood and bucket rods, wooden sheds, dressing floors, launders, capstan and rope, lathe, shears, 60 ft. high, wheelbarrows, ladders, a large quantity of pitwork, miners' tools, the fittings of account house, carpenters' and smiths' shops, with machines and tools, wire and other rope, chain, new and old timber, new and old iron, and an extensive variety of other plant, gear, and machinery, particularised in an inventory, for copy of which, and for further information and to view, apply to the Auctioneer; Capt. HANCOCK on the mine; or to Messrs. TILLY and FOX, Solicitors, Falmouth.
Dated Falmouth, 24th May, 1878.

TO BE SOLD, THE BEREHAVEN MINES, COUNTY CORK, IRELAND.

THE DIRECTORS of the BEREHAVEN MINING COMPANY (LIMITED) are prepared to RECEIVE TENDERS for the PURCHASE of the

BEREHAVEN MINES,

Situate in the parish of Kilmanagh, Barony of Bere, and county of Cork.

These mines are held under eight separate leases, made to JOHN LAVALLIN PUXLEY, Esq. Six of these leases reserve a royalty of 1-12th, and the remaining two of 1-15th, and have from 12 to 16 years to run.

The mining rights are under the townlands of Cluni, Allihies, Keallogue, and Coom.

There is ample MACHINERY on the mines for carrying on mining operations in the most extensive way, consisting of, amongst other matters, THREE PUMPING ENGINES, THREE DRAWING ENGINES, THREE CRUSHING ENGINES, ONE combined DRAWING and PUMPING ENGINE, air compressor for boring machinery, and two other small engines, smiths' shop, carpenters' shop, engineers' and fitters' shop, with all necessary appliances.

The mines were purchased in 1870 by the company for £100,000, since which large sums have been expended on them.

The quality of the Berehaven ores is far above the average of native ores sold in the English markets.

Tenders to be addressed to the company, and sent to their offices, 4 and 5, Westmoreland-street, Dublin, on or before Saturday, the 13th July next. The highest tender will not necessarily be accepted.

For further particulars, apply to Mr. ROBERT CLOGG, Secretary Berehaven Mines, Allihies, Bantry, County Cork; or Messrs. D. and T. FITZGERALD, Solicitors for the company, 20, St. Andrew-street, Dublin.
Dated 5th June, 1878.

TO BE SOLD, BY PUBLIC AUCTION, under Decree of the Supreme Court of Newfoundland in Equity, in a suit between CHARLES FOX BENNETT, Plaintiff, and SMITH MCKAY and LEANDER GILL, Defendants, on Monday, the 2nd day of September next, at Twelve o'clock noon (if not previously disposed of by private sale), at the Court House, in St. John's, Newfoundland, that VALUABLE COPPER MINE and MINING PROPERTY called and known as the

UNION MINE,

Situate on the east and west sides of Tilt Cove, on the north side of Notre Dame Bay or Green Bay, Newfoundland, and near Cape John, with all ERECTIONS, IMPROVEMENTS, PLANT, and OTHER PROPERTY and EFFECTS thereto appertaining.

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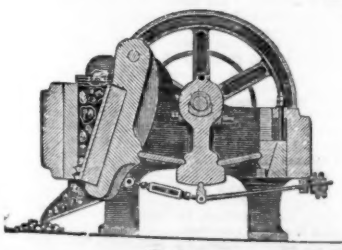

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4000	Brookwood, c, Buckfastleigh	1 16 0	1	½ 1	3 16 0	0 2 0	Nov. 1875
2000	Bryn Alyn,* l, Denbigh	10 0 0	—		0 7 0	0 7 0	Jan. 1877
400	Cashwell, l, Cumberland*	2 10 0	2¼	1¾ 2¼	1 9 6	0 2 0	Aug. 1876
1000	Carn Brea, c, t, Illogan†§	36 7 6	42½	40 42½	308 0 0	1 0 0	Feb. 1874
2450	Cook's Kitchen, t, Illogan†§	24 4 9	1½	1¼ 1½	11 17 0	0 7 6	Jan. 1872
10240	Devon Gt. Consols, c, Tavistock†*	1 0 0	2⅝	2⅛ 2⅝	116 15 0	0 5 0	July 1877
4296	Dolcoath, c, t, Camborne	10 14 10	31	29 31	112 11 3	0 5 0	June 1878
5000	East Black Craig,* l., Scotland	5 0 0	—		0 10 0	0 10 0	Feb. 1877
300	East Darren, l, Cardiganshire	32 0 0	—		235 10 0	1 0 0	Aug. 1876
6400	East Pool, t, c, Illogan	0 9 9	9	9¼ 9¾	15 9 3	0 2 6	May 1878
40000	Glasgow Cara., c* (30,000 £1 p., 10,000 15s. p.)		1⅜	1⅛ 1⅜	0 13 4	0 0 6	Feb. 1878
7500	Gorsedd and Merllyn Cons., l, Flint	2 10 0	4½	4 4½	0 5 0	0 5 0	Aug. 1877
15000	Great Dyliffe,* l, Montgom	4 0 0	3	2 3	0 2 6	0 2 6	Apr. 1876
15000	Great Laxey, l, Isle of Man*	4 0 0	19½	18½ 19½	23 11 0	0 8 0	Apr. 1878
615	Gt. Retallack, l, bl, Perranzabuloe	5 18 6	—		0 1 6	0 1 6	May 1876
8400	Green Hurth, l, Durham*	0 6 0	1¼	1⅛ 1¼	1 18 0	0 3 0	Mar. 1878
20000	Grogwinion, l, Cardigan*	2 0 0	3½	3 3½	0 14 0	0 2 0	Jan. 1878
9830	Gunnislake (Clitters'), t, c	5 5 0	2¾	2½ 2¾	0 13 9	0 1 0	Oct. 1876
60000	Holmbush, a, c, s-l, Callington*	1 0 0	1¾	1½ 1¾	0 4 6	0 0 6	Sept. 1877
2800	Isle of Man, l, Isle of Man*†	25 0 0	—		82 5 0	0 10 0	Feb. 1876
20000	Leadhills,* l, Lanarkshire	6 0 0	4	3¼ 3¼	0 15 0	0 3 0	Mar. 1878
400	Lisburne, l, Cardiganshire	18 15 0	65	55 65	586 10 0	1 0 0	May 1878
14000	Llanidloes,* l, Montgomery	3 0 0	1¼	¾ 1¼	0 9 0	0 4 6	Nov. 1876
9000	Marke Valley, c, Linkinhorne	5 3 6	⅝	⅜ ⅝	7 15 0	0 2 0	Jan. 1876
10000	Mellanear Copper, Hayle*	2 0 0	3⅝	3½ 3¾	0 2 0	0 2 0	Jan. 1878
9000	Minera Mining Co., l, Wrexham*	5 0 0	14	12 14	67 13 2	0 2 6	May 1878
30000	Mining Co. of Ireland, cl, c, l*	7 0 0	—		23 17 6	0 2 6	Jan. 1878
444	North Busy, c, Chacewater	3 9 6	5		1 10 0	1 0 0	July 1877
10289	North Hendre, l, Wales	2 10 0	—		2 7 6	0 5 0	June 1878
30000	Panty Mwyn,* l, Mold (8794 iss.)	2 0 0	2¼	2 2¼	0 1 0	0 1 0	Feb. 1878
6000	Pedn-an-drea Con., t, Redruth	0 8 6	4	3 4	0 9 0	0 9 0	June 1877
5000	Penhalls, t, St. Agnes	3 2 6	1	¾ 1	3 13 6	0 2 0	July 1875
6000	Pennant, l, bar, North Wales*	5 0 0	5	4 5	0 10 0	0 5 0	Mar. 1878
45793	Penstruthal,* t, c, Gwennap	2 0 0	¼	3s. 5s.	0 2 8	0 0 8	Nov. 1875
18000	Prince Patrick,* s-l, Holywell	1 0 0	2¼	1¾ 2¼	0 14 0	0 1 3	Jan. 1876
10000	Red Rock,* l, Cardigan	2 0 0	2½	2 2½	0 4 0	0 2 0	Jan. 1878
12000	Roman Gravels, l, Salop*	7 10 0	8	7½ 8	7 15 6	0 5 0	Mar. 1878
512	South Caradon, c, St. Cleer	1 5 0	70	60 70	742 10 0	1 0 0	Mar. 1878
6123	South Condurrow, t, c, Camborne‡	6 5 6	11½	11 11½	3 13 0	0 8 0	Apr. 1878
12000	St. Harmon,* l, Montgom	3 0 0	3½	2½ 3	0 6 0	0 3 0	July 1877
10000	So. Pr. Patrick,* s-l. (8000 sh. issued)	1 0 0	—		0 7 0	0 1 0	Oct. 1875
12000	Tankerville, l, Salop*	6 0 0	4	3¾ 4	4 17 0	0 5 0	Dec. 1876
6000	Tincroft, c, t, Pool, Illogan†	9 0 0	12	10 12	50 8 6	0 5 0	May 1877
15000	Van, l, Llanidloes*	4 5 0	22½	22 24	22 15 6	0 12 0	Jan. 1878
3000	W. Chiverton, l, Perranzabuloe†	12 10 0	10	9 10	55 10 0	0 10 0	Feb. 1878
1783	West Poldice, St. Day	10 0 0	—		1 19 0	0 4 0	July 1876
512	West Tolgus, c, Redruth	95 10 0	60	60 62½	28 5 0	1 10 0	May 1878
2048	West Wheal Frances, t, Illogan	28 1 3	3	2¾ 3	3 12 6	0 5 0	Oct. 1872
600	West Wheal Seton, c, Camborne†	47 0 0	15	12 14	446 0 0	0 15 0	Apr. 1878
12000	West WyeValley,* l, Montgom	3 0 0	3½	2 3	0 12 0	0 3 0	Nov. 1877
1024	Wh. Eliza Consols t, St. Austell	18 0 0	—		18 0 0	1 0 0	Apr. 1878
2048	Wheal Jane, t, Kea	2 13 10	1	1 1¼	8 5 0	0 5 0	July 1875
4295	Wheal Kitty, t, St. Agnes	5 4 6	2	1½ 1¾	11 19 6	0 2 6	Dec. 1874
25000	Wh. Newton, a, c, s, t, Calstock*	1 0 0	—		0 8 6	0 4 0	Sept. 1877
80	Wheal Owles, t, St. Just§	98 15 0	35	30 35	522 10 0	4 0 0	Aug. 1872
3000	Wheal Peevor, t, Redruth	7 11 0	6¾	6¼ 6½	0 5 0	0 5 0	Apr. 1878
6000	Wheal Prussia, t, Redruth	0 5 0	—		0 4 0	0 1 0	July 1877
10000	Wye Valley, l, Montgomery*	3 0 0	2¼	1½ 2	0 10 6	0 4 6	Oct. 1876

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Shares	Mines	Paid	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
35500	Alamillos, l, Spain*†	2 0 0	1½	1¼ 1½	1 19 3	0 1 0	April 1878
30000	Almada and Tirito Consol., s*†	1 0 0	½	¼ ½	0 6 3	0 1 0	May 1876
20000	Australian, c, South Australia†	7 7 6	2	1½ 2	0 19 6	0 1 6	July 1877
10000	Battle Mountain,* c, (6240 part pd.)	5 0 0	—		0 10 0	0 10 0	Nov. 1872
15000	Birdseye Creek, g, California*	4 0 0	1	¾ 1	0 14 0	0 2 6	June 1874
20000	Cape Copper Mining,*† So. Africa	7 0 0	33½	33½ 34½	30 10 0	0 17 6	Mar. 1878
34433	Cedar Creek, g, California*	5 0 0	—		0 5 0	0 2 6	June 1873
35000	Cesena Sul. Co., Romagna, Italy*	10 0 0	—		0 10 6	0 3 0	Aug. 1877
15000	Chicago, s, Utah*	10 0 0	1	½ 1	2 8 0	0 4 0	Nov. 1876
15000	Colorado United, s-l, Colorado*†	5 0 0	3¼	3¼ 3¾	0 13 6	0 4 0	Jan. 1875
10000	Copiapo, c, Chili* (£20 shares)	16 15 0	—		7 11 5	0 3 0	May 1877
100000	Don Pedro North del Rey*†	0 16 0	⅞	⅝ ⅞	2 5 9	0 2 0	Mar. 1872
23500	Eberhardt & Aurora, s, Nevada*†	10 0 0	8	7¾ 8¼	1 8 0	0 3 0	Dec. 1877
10000	English & Australian, c† S. Aust.	2 10 0	1⅜	1⅛ 1⅜	2 15 9	0 1 0	Mar. 1877
30000	Flagstaff, s, Utah*	10 0 0	1	⅝ ⅞	4 2 0	0 5 0	July 1873
35000	Fortuna, l, Spain*†	2 0 0	5¼	5 5½	6 19 10	0 5 0	April 1878
55000	Frontino & Bolivia, g, New Gran.*†	2 0 0	2	1½ 2	0 1 0	0 1 0	June 1876
80000	Gold Run, hyd.	1 0 0	—		0 2 4	0 0 4	Oct. 1872
68000	Kapunda Mining Co. Australia†	1 3 0	—		0 2 4	0 0 6	June 1873
20000	Last Chance, s,* Utah	5 0 0	1¼	¾ 1¼	0 14 0	0 2 0	July 1873
15000	Linares, l, Spain*†	3 0 0	5¾	5½ 6	17 7 10	0 5 0	April 1878
65000	London and California, g*†	2 0 0	⅝	⅜ ⅝	0 1 0	0 1 0	July 1875
7837	Lusitanian, Portugal*† (£5 sh.)	3 10 0	—		1 11 6	0 1 6	Mar. 1873
5000	Mamm. Copperopolis of Utah, c, s	10 0 0	—		0 5 0	0 5 0	Dec. 1872
5000	Mountain Chief, s, Utah*	10 0 0	—		0 4 0	0 4 0	Jan. 1873
10000	Pontgibaud, s-l, France†	20 0 0	29	27 29	25 8 0	1 11 0	Nov. 1877
100000	Port Phillip, g, Clunes*†	1 0 0	⅝	½ ⅝	1 10 0	0 1 0	Jan. 1878
54000	Richmond Consols, s, Nevada*†	5 0 0	9	11½ 12	4 11 6	0 7 6	May 1878
40000	Santa Barbara,* g, Brazil	0 10 0	1⅛	1¼ 1½	0 4 9	0 1 0	April 1878
120000	Scottish Australian Mining Co.*†	1 0 0	1¾	1½ 1¾	15 per cent.		May 1878
60000	Scottish Austral. Mining Co., New	0 10 0	⅞	¾ ⅞	15 per cent.		May 1878
112500	Sierra Buttes, g, California*†	2 0 0	2	1⅞ 2⅛	1 18 0	0 2 0	Oct. 1877
60000	South Aurora, s, Nevada*	5 0 0	¼	⅛ ¼	0 14 2	0 2 0	Nov. 1873
£253000	St. John del Rey*† (£5 stock & multiples dealt in)			200 310	½ year. 17½ p. ct. for		June 1878
20000	Tolima, g, s* So. America	5 0 0	—		0 11 6	0 6 6	May 1874
25000	Victoria (London)*, g, Australia	1 0 0	¾	⅝ ¾	0 12 6	0 0 7½	Jan. 1878
15000	Western Andes, s,* New Granada	5 0 0	—		0 12 0	0 12 0	July 1876
21000	W. Prussian (5500 pref. sh. 10l. pd)	10 0 0	11	10½ 11	1 8 0	0 4 0	Jan. 1878

NON-DIVIDEND FOREIGN MINES.

Shares	Mines	Paid	Last Pr.	Clos. Pr.	Last Call.
5000	Anguilla Phosphate, West Indies (4000 issued)	10 0 0	—		Fully pd.
12000	Argentine, g, Argentine Republic	5 0 0	¾	¼ ¾	Fully pd.
3000	Bellavista, s, Peru* (£10 shares)	10 0 0	—		Fully pd.
30000	Blue Tent, hyd., California	5 0 0	3	2½ 3	Fully pd.
49935	Chontales, g, s, Nicaragua*†	2 0 0	½	⅜ ½	Fully pd.
16000	Condes of Chili, s-l	5 0 0	—		Fully pd.
20000	English Australian, g, Victoria*	1 0 0	⅞	⅝ ⅞	Fully pd.
85000	Excelsior Hydraulic Gold Washing Co., California*	6 0 0	—		Dec. 1871
100000	Exchequer, g, s, California*†	1 0 0	2s.	1s. 2s.	Fully pd.
40000	Holcombe Valley, g,* California	1 0 0	—		Fully pd.
8000	Hornachos,* s-l, Spain	10 0 0	15	15 16	Fully pd.
12000	Hultafall,* l, bl, Orebro, Sweden	5 0 0	5	4 5	Fully pd.
12000	Hunter Consolidated, s-l, Utah	10 0 0	—		Fully pd.
20000	Imperial Brazilian Collieries, Brazil*	5 0 0	—		Fully pd.
100000	I. X. L., g, s, California*	1 0 0	—		Fully pd.
50000	Javali, g, Nicaragua*	2 0 0	⅜	¼ ⅜	Fully pd.
3500	La Manche, l, Newfoundland	10 0 0	—		Fully pd.
12000	Lanestosa,* l, z, Viscaya, Spain (£2 shares)	1 15 0	—		Mar. 1876
75000	Malabar, g, Colombia* (67165 issued)	1 0 0	¼	⅛ ¼	Fully pd.
40000	Malpaso, g, Colombia* (7400 pref. shares, fully paid)	1 0 0	⅜	¼ ⅜	Fully pd.
12000	Menzenberg, c, Hounef, Germany*	5 5 0	—		Fully pd.
4588	New Bensberg, i, l, Germany	5 0 0	—		Nov. 1876
66000	New Quebrada, c, Venezuela*	5 0 0	1⅝	1⅝ 1⅞	Fully pd.
20000	New Zealand Kapanga, g, Coromandel*	5 0 0	⅝	⅜ ⅝	Fully pd.
3000	Oregon,* g, Oregon, U.S. (preference shares)	4 0 0	—		Fully pd.
50000	Panulcillo, c, Chili*† (£80000 debentures)	4 0 0	¾	⅝ ¾	Fully pd.
80000	Pestarena United, g, Italy*†	3 0 0	⅜	¼ ⅜	Fully pd.
50000	Providencia and New Rosario, s, Mexico*	1 0 0	—		Fully pd.
50000	Rica, g, Colombia* (40000 issued)	1 0 0	¼	⅛ ¼	Fully pd.
£2,181,000	Rio Tinto,* c, Huelva, Spain	Stock	63	63 65	Fully pd.
100000	Rossa Grande, g, Brazil*† (£1 shares)	0 19 0	⅛	⅛	July 1872
30000	Russia Copper, Orenburg and Ufa*†	10 0 0	1½		Fully pd.
25000	San Pedro, c, Chili*	2 0 0	½	¼ ½	Fully pd.
10000	Silver Plume, s, Colorado*	1 0 0	—		Fully pd.
30000	Tecoma, s, Utah*	10 0 0	⅝	⅜ ⅝	Fully pd.
43174	United Mexican, s, Mexico*†‡	29 0 2	2¾	3¼ 3¼	May 1875
14000	Utah, g, s-l, Utah*	5 0 0	—		Fully pd.
50000	Virneberg, c Rheinbreitbach, Germany* (£2 shares)	1 15 0	—		Jan. 1878
15000	Yorke Peninsula, c, South Australia	1 0 0	½	¼ ½	Fully pd.
40000	Yorke Peninsula, c, South Australia Preference	1 0 0	1	⅞ 1⅛	Fully pd.

§ Have made calls since last dividend was paid.

FOREIGN AND MISCELLANEOUS STOCKS, BONDS, LOANS, AND TRUSTS.

	Closing Prices	
Argentine, 1868, 6 per cent.	77	79
Bolivia, 6 per cent.	25½	26½
Brazilian, 1865, 5 per cent.	90	92
Chilian, 1866, 7 per cent.	103	105
City of Providence, 5 p.c. coupon bnds	102	104
Egyptian, Gov. preference	71½	72
Do., unified debt, scrip	49¼	49¾
Do., 7 per cent., V.M.L.	77	80
Do., 9 per cent. guar.	78	83
Do., K. Daira Sanieh	45	47
Foreign and Col. Gov. Trust, 6 p. ct.	70	75
Do., 5 per cent., 2d issue	55	60
Do., 6 per cent., 3d issue	60	65
Do., 1872, 4th issue	55	60
Do., 1873, 5th issue	56	60
Peruvian, 1870, 6 per cent.	16	16½
Do., 1872, 5 per cent	14	14½
Russian, 5½ per cent. L. Mort.	70	76
Spanish, Quicksilver Mort., 5 p. ct.	98	100
United States Mort., 6 per cent.	97	99

NON-DIVIDEND MINES.

Shares	Mines	Paid	Last wk.	Clos. pr.
40000	Aberdaunant, l, Llanidloes*	1 0 0	1	¾ 1
10000	Aberystwith,* s-l, Cardigan	5 0 0	—	
80	Albion, i, Cornwall	100 0 0	—	
7800	Alvig. & Burng.,* t, St. Aust.	3 0 0	1¾	1½ 1¾
12000	Assheton, l, Carnarvonshire*	5 0 0	1	¾ 1
50000	Ballycummisk,* c, Schull	2 0 0	—	
12000	Bedford Unit.,* c, Tavist. (1l. liab.)	0 1 0	¼	⅛ ¼
28000	Belstone,* c, Devon (27,000 fy. pd.)	1 0 0	—	
8000	Blaen Caelan,* l, Cardigan	3 0 0	5	4 5
3937	Bine Hills, t, c, St. Agnes	3 12 6	¾	½ ¾
30000	Bodidris,* l, bl, Denbighshire	1 0 0	1⅜	1⅛ 1⅜
1000	Bollihope Vale,* s-l, Durham	5 0 0	—	
200	Botallack, t, c, St. Just‡	123 15 0	—	
2000	Bowden Hill,* mn	1 0 0	—	
6000	Bradwell Moss Rake	1 0 0	1	⅞ 1
50000	Cambrian,* s-l, c, Cardiganshire	2 0 0	3¼	3 3¼
3348	Cargoll, s-l, Newlyn‡	7 4 0	2¼	2 2¼
10000	Caron, l, Cardigan*	2 0 0	2½	2 2½
20000	Central Foxdale, l, I. of Man* (2l. sh.)	1 5 0	—	
10000	Central Van,* l, bl, Llanidloes	5 0 0	—	
5120	Clementina, l, Llanrwst*	1 0 0	1¼	1 1¼
7500	Combellack,* t, Wendron	2 0 0	—	
6000	Combmartin, s-l, North Devon	0 7 0	⅛	⅛
24000	Court Grange, s-l, Cardiganshire	1 0 0	1⅛	1 1⅛
20000	Cwm Dwyfor,* c, s-l, Carnarvonsh	1 0 0	—	
3000	Cwmystwith (New) [5l. shares]	4 0 0	—	
1180	D'Eresby Cons., l, bl, Carnarvon	10 0 0	13	10 12
512	D'Eresby Mountain, l, bl, Llanrwst	20 0 0	100	85 100
20000	Denbighshire Consolidated, l*	3 0 0	1	⅞ 1
12000	Derwent,* l, Durham	4 0 0	2	1¾ 2
10000	Dubby Syke, l, Durham*	0 15 0	⅜	¼ ⅜
6144	East Caradon, c, St. Cleer‡	2 19 0	1	¾ 1
4000	East Chiverton, l, Perranzabuloe	7 1 0	3	2½ 3
3000	East Craven Moor*, l, Pateley Bdge	10 0 0	10	9 10
6000	East Goginan, l, Cardigan	2 0 0	—	
18000	East Van, l, Llanidloes*	5 0 0	5	4¾ 5
1722	East Wh. Lovell, t, Helston	9 1 0	⅛	¼ ⅛
20000	Elgar,* s-l, Cardiganshire	1 0 0	⅜	⅜ ⅜
8000	Fronvellan, l, Mont.* [4000 sh. fy. pd.]	1 0 0	—	
3950	Gawton, c, Tavistock	4 5 6	⅜	⅛ ⅜
12000	Glan Clwyd,* l, Gwyddelwern	1 0 0	—	
14000	Glenroy,* s-l, Isle of Man	4 5 0	1	¾ 1
10000	Glyn,* l, Llanidloes	2 0 0	¾	½ ¾
12000	Goginan, & Level Newydd, Card., l	2 10 0	—	
100000	Gold, g, Merionethshire	1 0 0	—	
20000	Goreu,* s-l, Carmarthen	1 0 0	1	¾ 1
20000	Gt. E. Foxdale, l, I. of Man (1l. sh)	0 18 0	—	
12000	Great Holway,* l, Flintshire	5 0 0	5¼	4¾ 5¼
9500	Great Pant-y-Pydew, l, Holywell	2 0 0	—	
256	Gt. Wheal Eleanor, t, North Bovey.	1 15 0	2	1¾ 2
6000	Great Wheal Rodd, s-l, Cornwall	0 10 0	¾	¾ 1
10000	Harehope Gill,* l, Durham (£1 sh.)	0 5 0	—	
600	Hartington Moor,* carb. l, Derby	1 0 0	2	1½ 2
6400	Harwood,* l, Durham	0 15 0	5s.	4s. 5s.
1024	Herodsfoot, l, near Liskeard†	8 10 0	7	6 7
18000	Hingston Down, c, Calstock*†	0 6 0	½	¼ ½
5000	Hush Eisteddfod Minera,* l	2 0 0	—	
200	Islay,* l, Scotland	28 0 0	—	
2500	Killaloe, sl, Tipperary‡	1 0 0	—	
6000	Killifreth, t, Chacewater	2 3 6	¾	⅝ ¾
25000	Kingston Con., s-l, Stoke Climsland.	1 0 0	—	
	Ditto, preference	1 0 0	1⅛	1 1⅛
12000	Ladywell,* l, Salop	2 10 0	1	¾ 1
12000	Ditto, 10 per cent. pref., 1l. each	0 10 0	⅝	½ ⅝
2500	Levant, c, t, St. Just	9 18 6	—	
6000	Livingstone Consols, t, St. Agnes	0 10 0	1	¾ 1
5120	Lovell, t, Wendron	0 16 0	2	1½ 2
25000	Llanrhaiadr, l, Montgomery*	2 0 0	—	
30000	Llanrwst,* l, Carnarvon	2 0 0	4	3½ 4
24	Mawston,* l, South Wales	50 0 0	60	55 60
6000	Medlyn Moor, t, Wendron	1 17 4	—	
11000	Melyndwr, l, Cardigan*	3 0 0	1¼	¾ 1¼
11000	Monydd Gorddu, l, Cardigan* (Red.)	5 0 0	—	
12000	Morfa Du, z, g, s, Anglesea	1 0 0	⅞	½ ¾
25000	Nant-y-Ronen, s-l, Cardigan*	1 0 0	—	
15000	Nascent Copper*	1 0 0	—	
4768	New Bronfloyd,* l, Cardigan (5l. sh.)	3 16 0	4½	4⅜ 4½
8000	New Dolcoath, t, c, Camborne*	3 0 0	1¼	1⅛ 1¼
20000	New East Foxdale, s-l, Isle of Man.	0 15 0	—	
16000	New Fowey Consols, t, St. Blazey*.	3 0 0	2	1½ 2
1492	New Hendra, t, Breage	3 9 0	—	
3200	New South Merllyn, l, Flint*	2 10 0	1	½ 1
3500	New Tincroft,* t, Lelant	0 0	3	2½ 3
5000	New Wheal Emma, c, Buckfastleigh	2 0 0	—	
4000	North Cornwall,* l, Cornwall	5 0 0	5¼	5⅛ 5⅜
30000	North Laxey,* Isle of Man	1 0 0	⅛	⅛ ¼
2000	North Levant, t, c, St. Just‡	12 8 0	1	¾ 1
20000	North Prince Patrick,* l, Holywell.	1 0 0	—	
5936	North Treskerby, c, St. Agnes	5 7 10	—	
2000	North Wheal Towan, t, c, Illogan	1 19 6	—	
6400	Oola Hills,* s-l, Limerick	5 0 0	—	
12000	Pandora,* l, Carnarvon	2 0 0	1	¾ 1
6000	Park Valley,* s-l, North Devon	0 4 0	1	¾ 1
6000	Parracombe, s-l, Cornwall	0 5 0	⅜	¼ ⅜
16923	Parys Mountain,* c, Anglesea	3 0 0	½	⅜ ½
12000	Phoenix, & W. Phoenix, t, c, Link.§	5 7 3	5	4½ 5
4000	Pateley Bridge, l, Yorkshire	5 0 0	2½	1¼ 2½
7000	Picton,* s-l, Holywell, fully paid	1 0 0	3⅜	3 4
12000	Plynlimmon, l, Llanidloes*	2 0 0	6s.	4s. 6s.
10000	Port Nigel,* s-l, Carnarvonshire	2 0 0	½	¼ ½
2000	Prideaux Wood, t, Llanivery	5 0 0	—	
5182	Prince of Wales, c, Calstock‡	2 6 0	2s.	1s. 2s.
6000	Relistian Consols, c, Gwinear	0 10 0	⅝	½ ⅝
15000	Rookhope, l, Durham*	1 10 0	1	¾ 1
5000	Silvercross,* c, t, Marazion	1 0 0	—	
4200	Snowbrook, s-l, Montgomery	5 0 0	—	
6000	So. Cwmystwith, l, Cardiganshire.	2 0 0	3¼	3 4
5000	South Darren, l, Cardigan*	1 10 0	2½	2 2½
30000	South de Eresby Mountain, l	1 0 0	1⅜	1⅛ 1⅜
512	South Dolcoath, c, t, Redruth	12 5 0	1⅛	1 1⅛
5000	So. Molton Cons., s-l, No. Devon	0 3 6	1	¾ 1
18000	South Roman Gravels, l*	1 10 0	⅝	½ ⅝
6000	South Roskear, t, c, Camborne	7 5 0	—	
6000	South Tolcarne, t, c, Camborne	2 11 6	¾	½ ¾
937	South Wheal Crofty, c, Illogan	40 0 10	8	7 8
4500	South Wh. Frances, c, Illogan†	7 12 4	3½	2¾ 3½
6000	St. Lawrence, Amal., l, Flintshire*	2 0 0	—	
10000	St. Patrick, l, Halkin, Holywell*	1 0 0	1	¾ 1
6000	Success, &c., l, Derb. (12,000l. called)	1 0 0	—	
16000	Sunnyside,* l, Durham	2 0 0	2½	2 2¼
30000	Talybont, s-l, Cardiganshire	1 0 0	1¼	1 1¼
8400	Teesdale,* l, Durham	1 0 0	½	⅛
14000	Teign Valley, l, bar., Bridford	1 0 0	—	
10000	Temple, l, Cardigan*	1 0 0	5¼	4¾ 5¼
10000	Tolgus Consols,* c, Redruth	5 0 0	4½	4 4½
12000	Trebeigh Consols, s-l, St. Ive	0 9 6	⅜	¼ ⅜
6000	Treleigh Wood, t, Redruth	6 1 0	—	
12000	Trethellan, s-l, Crantock*	2 0 0	—	
640	Truro*, l, Nerquis, Flintshire	10 0 0	—	
10000	Tyn-y-Fron,* l, Cardigan	1 0 0	1⅜	1⅜ 1⅝
20000	Van Consols, l, Llanidloes*	2 10 0	—	
1000	Vaughan*, l., Cardiganshire	10 0 0	—	¼ ½
12000	West Assheton, l, Carnarvon	1 0 0	1¼	1¼ 1¾
6000	West Basset, c, Illogan†‡	6 13 4	¾	½ ¾
5500	West Combmartin, s-l, North Devon	1 0 0	—	
7000	Ditto	0 2 6	—	
3000	W. Craven Moor, l, Pateley Bridge*.	10 0 0	10	9 10
5000	West Godolphin, t, c, Breage	2 10 0	1¼	1 1¼
12000	West Goginan,* Cardiganshire	2 0 0	1¼	¾ 1¼
10000	West Llangynog, s-l, Montgomery	2 0 0	—	
3000	West Mary Ann, l, Menheniot	0 3 6	¼	⅛ ¼
50000	West Milwr, s-l, Flint	1 0 0	—	
5000	West of England Granite Company.	2 0 0	2	2
20000	West Pateley Bridge, l, Yorkshire	1 0 0	2½	2 2½
1000	West Roskear, t, s-l, bl, c, Camborne.	2 0 0	17	15 17
12000	West Tankerville,* l, Salop	3 0 0	¾	½ ¾
3000	Ditto, 15 per cent. pref.	3 0 0	—	
3000	West Wheal Peevor, t, Redruth	0 10 0	6¾	6¼ 6¾
6000	Wheal Agar, c, Illogan	12 0 0	4½	3¾ 4½
512	Wheal Basset, c, Illogan‡	26 2 6	7	6 7
6000	Wheal Coates, t, St. Agnes	2 0 0	—	
2635	Wheal Comfort, c, Gwennap	1 5 0	—	
6000	Wheal Crebor, c, Tavistock	4 3 0	1	⅜ ¼
5179	Wheal Grenville, c, Camborne*	2 11 6	3¾	3 3½
12000	Wh. Mary Hutchings,* t, Plympton‡	1 18 6	3½	3⅜ 3⅝
13000	Wheal Russell, c, Tavistock	2 1 8	—	
4096	Wheal Uny, t, s, Redruth	14 0 6	1¼	¾ 1¼
2324	White Cliff,* l, Llanrwst	5 0 0	—	
25000	Wicklow, c, sul, i, Wicklow	2 10 0	—	

b, blende; cl, coal; c, copper; g, gold; l, lead; s, silver; sl, slate; s-l, silver-lead; t, tin; z, zinc.

* Limited Liability Companies; † quoted on the Stock Exchange; ‡ have paid dividends.

IRON AND COAL COMPANIES.

Shares	Company	Paid		Price	
£100	Abbot, John, and Co. [L.]	£75 0 0	16	15	dis.
15	Albion Steel and Wire Co. [L.]	14 0 0		—	
5	Alltami Colliery Co. [L.]	5 0 0	3½	4	
100	Ashbury Co. [L.]	90 0 0	55	45	dis.
10	Bagnall, John, and Sons [L.]	10 0 0	1¼	1¼	
10	Benhar Coal Co. [L.]	10 0 0	5¼	5¼	
50	Bilbao Iron Ore Co. [L.]	50 0 0	26	27	
10	Bilson & Crump Meadow Coll. Co. [L.]	10 0 0		—	
4	Blaen Cwmbach Coal Co. [L.]	4 0 0		—	
50	Blaenavon Iron and Steel Co. [L.]	50 0 0		—	
100	Bolckow, Vaughan, and Co. [L.]...A	50 0 0	4	6	pm.
50	Bowling Iron Co. [L.]	50 0 0		—	
50	Britannia Ironworks [L.]	25 0 0		—	
50	Brown, Bailey, and Dixon [L.]	40 0 0	10	9	dis.
100	Brown, John, and Co. [L.]	70 0 0	11½	11	dis.
5	Cakemore Colliery Co. [L.]	5 0 0	3	5	
100	Cammell and Co. [L.]	80 0 0	9	8	dis.
20	Cannock and Huntington Coal [L.]	10 0 0	9	8½	dis.
10	Cardiff & Swansea St. Coal Co. [L.]	9 0 0	¾	1	
10	Cardigan Steel and Wire Co. [L.]	8 10 0		—	
10	Central Swedish Iron and Steel [L.]	10 0 0	1	2	
5	Chapel House Colliery	5 0 0	3	3¼	
50	Charlton Iron Co. [L.]	50 0 0	8	10	
50	Chatterley Iron Co. [L.]	45 0 0	35	37½	dis.
10	Chillington Iron Co. [L.]	10 0 0	2	3	
10	Consett Iron Co. [L.]	7 10 0	9	10	pm.
1	Consett Spanish Ore [L.]	1 0 0	¼	½	dis.
50	Cooke, William, and Co. [L.]	40 0 0	32	30	dis.
20	Darlington Iron Co. [L.]	12 10 0	½	½	
50	Davy Brothers [L.]	22 10 0	1	2	pm.
5	Diamond Fuel Co. [L.]	5 0 0		—	
23	Ebbw Vale Co. [L.]	20 0 0	13	12	dis.
100	Fox, Samuel, and Co. [L.]	80 0 0	30	31	
10	General Mining Ass. [L.] (£1 returned)	9 0 0	2	3	
20	Great Western Coal Co. [L.]	17 0 0		—	
2	Gwyngwillim Colliery Co. [L.]	2 0 0		—	
15	Hopkins, Gilkes, and Co. [L.]	11 0 0	10	9	dis.
50	Knowles, Andrew, and Sons [L.]	17 0 0	4½	4	dis.
10	Llay Hall Coal, Iron, & Firebrick [L.]	10 0 0	3	1	dis.
5	Littledean Woodside Coll. Co. [L.]	5 0 0		—	
50	Llynvi, Ogmore, & Tondu Co. [L.]	50 0 0	5	5¼	
10	Lydney and Wigpool Iron Ore [L.]	8 5 0	11	10	dis.
10	Marbella Iron Ore Co. [L.]	10 0 0	7½	7	dis.
6	Mersey Steel and Iron Co. [L.]	5 0 0		—	
10	Midland Iron Co. [L.]	5 0 0	1½	1	dis.
5	Mold Argoed Colliery Co. [L.]	5 0 0	3	2¼	dis.
10	Monkland Iron and Coal Co. [L.]	10 0 0	7½	7	dis.
4	Mwyndy Iron Ore [L.]	3 10 0		—	
100	Nant-y-Glo and Blaina (8 p.c. pref.)	100 0 0	17	18	
3	Nerbudda Coal and Iron [L. & Red.]	2 0 0	1	1¼	pm.
20	New Sharlston Collieries [L.] Pref.	20 0 0	18	16	dis.
10	Newport Abercarn Coal Co. [L.]	10 0 0	4	4½	
10	Northmptn. Coal, Iron & Wagon [L.]	8 0 0		—	
10	Northfield Iron Co. [L.]	8 10 0	7¼	7¼	dis.
1	Norton Green Coal Co. [L.]	1 0 0		—	
35	Palmer's Shipbuilding and Iron [L.]	25 0 0	15½	15	dis.
100	Parkgate Iron Co. [L.]	65 0 0	15	13	dis.
20	Patent Nut and Bolt Co. [L.]	14 0 0		7½	pm.
20	Patent Shaft and Axletree [L.]	10 0 0	½ dis.	par	
20	Pelsall Coal and Iron [L.]	15 0 0	15	12½	dis.
50	Phœnix Bessemer Co. [L.]	40 0 0		—	
50	Rhymney Iron Co. [L.]	50 0 0	16	16½	
10	Richards and Co. [L.]	10 0 0		—	
10	Sandwell Park Colliery Co. [L.]	10 0 0	14	14¼	
10	Ditto New	5 0 0	2	2¼	pm.
100	Shotts Iron Co. [L.]	100 0 0	90	91	
100	Sheepbridge Iron and Coal [L.]	55 0 0	20	19	dis.
50	Silkstone & Dodworth Cl. & Iron [L.]	33 0 0	24	23	dis.
20	Skerne Ironworks [L.]	20 0 0	15	14½	dis.
50	Somorrostro Iron Co. [L.]	50 0 0		—	
25	South Wales Coal Co. [L.]	21 0 0	6¼	7⅛	
100	Staveley Iron and Coal Co. [L.]	60 0 0	13	14	pm.
100	Ditto ditto New	10 0 0	2¾	3¼	pm.
10	Swansea Valley Steam Coll. Co. [L.]	6 0 0			
100	Thames Iron Company	100 0 0		—	
50	Tredegar Iron and Coal Co. [L.]	20 0 0	11	10	dis.
25	Ditto B. shares	25 0 0	21	22	
20	Ulverston Mining Co. [L.]	12 0 0	5	3	dis.
10	Vancouver Coal [L.]	6 0 0	1½	1½	dis.
100	Vickers, Sons, & Co. [L.]	100 0 0	30	35	pm.
50	Welsh Ironworks Co. [L.]	50 0 0		—	
25	W. Cumberland I. and Steel [L.]	20 0 0	7¾	8¼	
10	West Mostyn Coal [L.] (12 p.c. pref.)	5 0 0		—	
5	West Swansea Colliery Co. [L.]	5 0 0		—	
10	Whitehaven Iron Co. [L.]	10 0 0		—	
100	Wigan and Whiston Coal Co. [L.]	70 0 0		—	
100	Wigan Coal and Iron Co. [L.]	75 0 0		—	

WAGON COMPANIES.

Shares	Company	Paid			
10	Birmingham Wagon Co. [L.]	10 0 0	17	17¼	
10	Ditto, 2nd issue	4 0 0	2	2¼	pm.
10	Ditto, pref., 6 per cent.	10 0 0	11¾	12	
20	British Wagon Co. [L.]	10 0 0	1⅜	1⅝	pm.
10	Gloucester [L.]	10 0 0	8⅞	9¼	
10	Ditto, 5th issue	5 0 0	⅞	⅜	dis.
10	Met. Rail. Car. and Wagon Co. [L.]	5 0 0	2⅝	3	pm.
5	Ditto, pref., 6 per cent.	5 0 0	5¾	6	
10	Midland	10 0 0	6⅛	6⅜	pm.
20	North Central Wagon Co.	20 0 0	22	23	
5	Rail. Car. [L.] (Oldbury)	5 0 0	6	6¼	
5	Ditto, pref., 6 per cent.	5 0 0	5	5½	
20	Sheffield Wagon Co. [L.]	15 0 0	1½	2	pm.
10	Yorkshire Wagon Co. [L.]	10 0 0	3¼	4	pm.

TELEGRAPH COMPANIES.

Shares	Company	Paid		
"St."	Anglo-American	100 0 0	62¼	63¼
10	Brazilian Submarine	10 0 0	6¾	7
20	Direct United States Cable	20 0 0	13⅛	13⅜
10	Eastern	10 0 0	7¼	7¾
10	East. Exten., Australia and China	10 0 0	7⅜	7⅞
10	Great Northern	10 0 0	8½	8¾
25	Indo-European	25 0 0	20	21
10	Mediterranean Extension	10 0 0	2½	3
8	Reuters	8 0 0	10	11
Stk.	Submarine	100 0 0	221	226
10	West India and Panama	10 0 0	2⅛	2⅜
20	Western and Brazilian	20 0 0	5	5¼
$1000	Western Union, 7 per cent. Mort. Bonds	$1000	111	113

MISCELLANEOUS.

Shares	Company	Paid			
Stk.	Atlantic and Great Western Leased Lines, Rental Trust	100 0 0	42	46	
25	Australian Agricultural	21 10 0	81	83	
25	Austral. Mort. Land and Finance [L.]	5 0 0	6¾	7¼	pm.
10	Avonside Engine [L.]	7 0 0	5	3	
Stk.	Baltimore and Ohio, 6 per cent.	100 0 0	105	107	
10	Brighton Aquarium [L.]	10 0 0	9	10	
Stk.	Cent. of New Jersey Con. Mort.	100 0 0	84	85	
Stk.	Cent. Pacific of Calif., 1st Mort. 6 p.c.	100 0 0	109½	110½	
25	City of London Real Property [L.]	12 0 0	1¾	2¼	pm.
5	Diamond Rock Boring	4 10 0	3	2¼	dis.
15	English and Foreign Credit	8 0 0		—	
16	Fore Street Warehouse [L.]	14 0 0	11	12	
15	Foster, Porter, and Co. [L.]	10 10 0	21	22	
5	Gen. Phos. & Chem. Works Co. [L.]	5 0 0		—	
1	Greenhill [L.]	1 0 0		—	
5	Kit Hill Tunnel [L.]	1 0 0		—	
17	Hudson's Bay Company	17 0 0	9⅞	10⅛	
10	Huntington Copper and Sul. Co.	9 0 0	8¼	7¾	
Stk.	Illinois Central, $100 shares	100 0 0	85½	86½	
Stk.	Illinois & St. Louis Bridge, 1st Mort.	100 0 0	80	85	
Stk.	Ditto, 2nd Mort., 7 per cent.	100 0 0	32	37	
Stk.	Illinois Cent. Sinking Fund, 5 p. cent.	100 0 0	99	101	
Stk.	Ditto, 6 per cent.	100 0 0	108	110	
7½	Imperial Credit [L.]	7 10 0	7⅛	7⅝	
—	Ditto, Surplus Certificate	—	6⅛	6⅝	
Stk.	Lehigh Val. Con. Mort., A, 6 p. cent.	100 0 0	103	105	
10	Milner's Safe [L.]	10 0 0	8¼	8¾	
25	National Discount [L.]	5 0 0	9¾	10¼	
Stk.	N. Cent. Rail. Con. Mort., 6 per cent.	10 0 0	86	88	
10	Pawson and Co. [L.]	8 0 0	par	¼	
50	Peninsular and Oriental Steam	50 0 0	38	40	
Stk.	Pennsyl. Gen. Mort. 6 p. cent., 1910.	100 0 0	108½	109½	
Stk.	Ditto, Con. Sink. Fund, 6 p. ct., 1905	100 0 0	98	99	
Stk.	Scottish Aust. Investment Company.	100 0 0	195	200	
Stk.	Ditto, 6 per cent. Preference	100 0 0	125	130	
10	Silber Light (ord. sh.)	10 0 0		—	
20	Suez Canal shares	20 0 0		—	
12	Telegraph Construc. & Mainte. [L.]	12 0 0	31	32	
5	Ditto, Second Bonus Three per Cents	5 0 0	2⅛	2⅝	
10	Tharsis Sulphur and Copper Co.	10 0 0	23	24	
Stk.	Union Pacific Land Grant, 1st Mort.	100 0 0	107	109	
Stk.	Union Pacific Railway, 1st Mort.	100 0 0	109	111	

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